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UNIVERSITY OF GONDAR



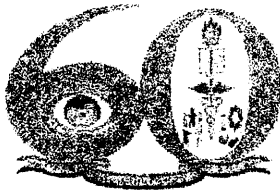
THE 24TH ANNUAL RESEARCH CONFERENCE

JUNE 13-14, 2014

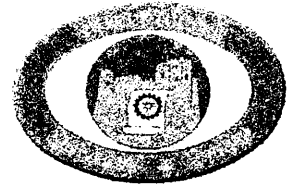
***MAIN THEME: Addressing Socio-Economic
Problems through Thematic and Team Based
Research***

ABSTRACT BOOKLET

**GONDAR,
ETHIOPIA**



UNIVERSITY OF GONDAR



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Preface

The 24th annual staff-student research conference of university of Gondar will be held on June 13 and 14, 2014 at a science Amba auditorium of the University. This year's annual research conference is special as the year marks the Diamond Jubilee of the University of Gondar. Drawing on the experiences we accumulated for six decades, we strive to realize the development and transformation of the country through research and community services.

Staff members, postgraduate and senior undergraduate students of the University, invited guests and speakers will participate in the conference. The annual conference of the University is meant to share experience in research activates among juniors and seniors, staff and students,, and invited guests. It is also meant to motive students and young faculty to engage in research and also to initiate and strengthen interdisciplinary collaboration. The findings of the studies and the resulting recommendations are expected to be used in solving the diverse societal problems we have been facing.

Research activities at the University of Gondar are primary aimed at solving societal problems. In line with this, the University of Gondar has developed prioritized research thematic areas to fundamentally change the research activities at the University level. The indentified research thematic areas are expected to enable most research undertakings to solve community problems through development oriented community service, technology transfer, and skill and knowledge generation.

It is worthy of note that our university is located in a unique topographic setting in Ethiopia which enables its faculty and students to look into the diverse societal problems which need the fruits of inquisitive minds. This has recently been witnessed by the huger number of research proposals submitted by the faculty for funding to the university and by the large number of research abstracts submitted for presentation in the University and elsewhere. The Research and Community Service Vice President Office of University of Gondar would like to thank all involved in the realization of the research conference.

Introduction

Undertaking creditable researchers and rendering consequential community services has been one of the core tasks at the University of Gondar, UOG) since its inception as Gondar Public Health College and Training Center mainly in the health area. Research at the university has been undertaken by both students and staff members. Formerly, the academic staff members were expected to devote one fourth (25%) of their working time in research and related tasks. These days, however, the academic staff members are anticipated to dedicate 25% of their working time in research and community services of which 40% belongs to research undertakings. In addition, the students carry out researchers in partial fulfillments for the requirements of their degree. Each year, the research works, which are conducted by students and staff members, are presented in the annual staff and students' research conference of the University. Furthermore, research at the university has been conducted in collaboration with various national and international institutions. In such successful journey, the research works of many of the scholars at the University have been published by reputable scientific Journals.

1.1. Purpose statement, vision and values of the Office of the Vice President for Research and Community Services (VPRCS)

Purpose Statement of VPRCS

The Office of the Vice President for Research and Community Services (VPRCS) is enthusiastic in facilitating problem based research undertakings and the delivery of creditable community services based on the needs of the society and disseminates research outputs.

Vision of VPRCS

The vision of VPRCS is aspiring to see the University of Gondar as a prominent institution renowned for its research and community services in the nation.

Values of the VPRCS

- **Quality at all:** we greatly endorse the undertaking of quality researches and community services.
- **Teamwork:** by its nature the organizational structure of RCSCP highly demands team work. i.e., the activity of one is related directly or indirectly with the other. Therefore, we decidedly promote teamwork.
- **Care for partners:** Our goals will be achieved on close collaboration with our partners. Thus, we greatly value our partners.
- **Committed to ethics:-** Compliance to legal , social and professional ethics and norms is crucial for our development and goodwill.
- **Creativity and innovation:-** introducing new working condition and generating valuable knowledge and technology are the backbones for the success of the core process.
- **Proudly community servant:-** serving the community with all paramount efforts will enhance both the living condition of the community and moral satisfaction of the employees in the office.

1.2. Research thematic areas

The Office of the Vice President for Research and Community Services has come up with 20 broad research thematic areas. These broad research thematic areas can extend across faculties/colleges/schools and will normally involve a number of research groups. The research thematic areas and their main researchable issues are shown below:

Theme 1: Infectious Diseases

Theme 2: Maternal and Child Health/RH

Theme 3: Nutrition Related Issues

Theme 4: Environmental and Occupational Health and Safety/Other Public Health Issues

Theme 5: Farm and Wild Animal Health

Theme 6: Veterinary Public Health

Theme 7: Animal Production and Productivity; Socio-economic and Institutional Issues

Theme 8: Water, Energy, Environment Management and Development Issues

Theme 9: Information, Communication and Construction Technology

Theme 10: Designing, Manufacturing, Industrial Automation and Quality Control

Theme 11: Science and the Society

Theme 12: Crop Production and Protection

Theme 13: Rural Development and Agricultural Extension

Theme 14: Livelihood and Development

Theme 15: Tourism, Hospitality and Resource Management

Theme 16: Business, Finance and Marketing

Theme 17: Socio-cultural and Socio-economic Development Issues

Theme 18: Psychosocial Issues and Mental Health

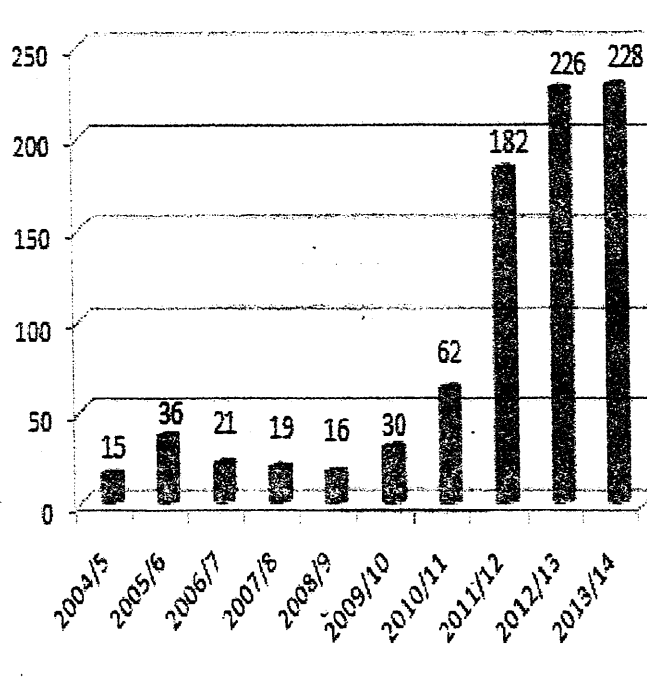
Theme 19: Legal System, Judiciary and Human Rights

Theme 20: Quality of Education

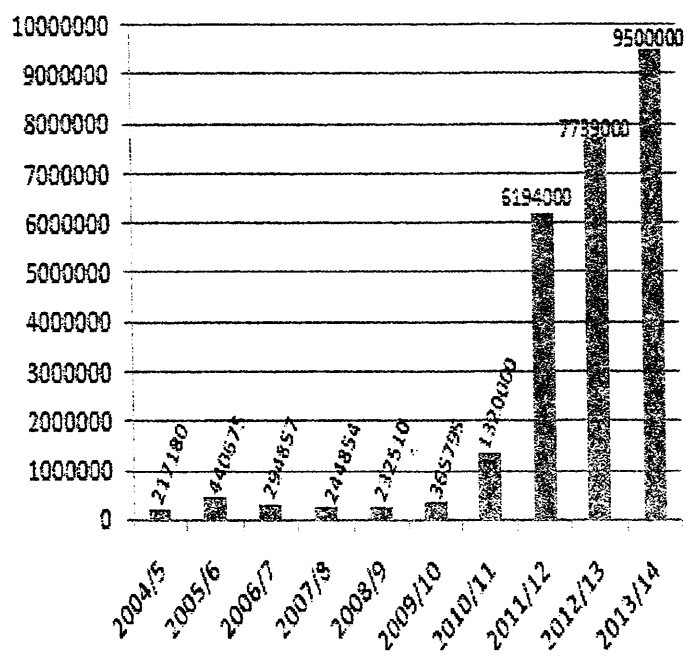
Research trends

Prioritized and societal problem solving researches are supported by research budget allocated by *Ministry of Finance and Economic Development* is increasing from time to time.

Currently, the prioritized and problem solving researches in different categories; Thematic, Trans-disciplinary, Innovative and Administrative, are more than 210 with 9.5 million Ethiopian Birr from the government.



Number of researches granted vs academic year



Amount granted vs. academic year

This booklet compiles the research works of academic staff members, postgraduate students and other researchers who submitted their abstracts to be considered for presentation on the 24th annual research conference of the University of Gondar.

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1. PRESENTATIONS BY INVITED GUESTS

GUEST1: Women in Scientific Research: The Ethiopian Perspective

(Yalemtehay Mekonnen¹, Professor of Cell & Human Physiology)

College of Natural & Computational Science, Addis Ababa University

Abstract

Women engaged in scientific research all over the world have a lot of challenges. It becomes more apparent in the developing world. Amidst all the many challenges women encounter there are a few prominent scientists who are role models in many parts of the world, since the first Nobel Prize winner in Physics Madam Marie Curie (1903). In Ethiopia higher education is about 60 years old. The number of women who are university graduates in different fields is very limited. In this presentation I will highlight some examples of our research group engagement over the last 20 years. Our research focuses mainly on medicinal plants and human health. I do hope that the presentation will give some insight to motivate young researchers and in particular women academics.

GUEST2: The multi-functionality of biogas to overcome family food security.

(Hailu Araya¹ (PhD))

Abstract

Background: Biogas technology has been introduced to Ethiopia 20-25 years ago by different NGOs. It has been introduced for light and energy use only mainly for the rural people. However, their function was not as expected because of different reasons i.e. from no initiatives taken by the owners to limited advantages or services from the biogas. However, at present widely spread throughout the country the project called National Biogas Project of Ethiopia (NBPE). It is a project started in 2009 for five years (till 2013) to build 14,000 biogas in four regions (Amhara, Oromiya, SNNPR and Tigray).

Methods: The methodologies used for the data collection are observation, socio-economic survey, joint experimentation with farmers, etc. However, it lacks scientific research methodologies to support farmers through evidences in one side and communication gap between farmers and scientists.

Results and conclusion: In addition to the construction of the biogas digester project partners are giving different trainings about the use of energy for light and cooking including bioslurry for farming purposes. The project has shown impressive results through: improving family economy through selling bioslurry and compost; introduced new or innovative way that reduce composting

period into two months; improve soil fertility, crop diversification and increasing yield in different crops at least it became equal in moist areas and better in moisture stress areas than the chemical fertilizer; adapt the effect of climate change, improve gender disparity that improve male participation in kitchen work.

Therefore, the aim of this paper is to assess the diverse benefits of the smallholder farmers towards biogas and bioslurry. Facts from project partners and implementing farmers will be presented.

Key word: agrobiodiversity, biogas, bioslurry, compost, economy, energy

GUEST3: Methicillin Resistant *Staphylococcus aureus* and the environment: Should I wash my hands?

(Armando Hoet¹ (PhD, Diplomate ACVPM, Associate Professor Coordinator, Veterinary Public Health Program, Department of Veterinary Preventive Medicine, College of veterinary Medicine, The Ohio State University, email: hoet.1@osu.edu.)

Abstract

Background: Today Methicillin Resistant *Staphylococcus aureus* (MRSA) is one of the most important nosocomial pathogens worldwide. In the United States, MRSA causes more than 90,000 hospital-acquired septicemic cases per year, of which at least 19,000 of these die from the infection. One of the biggest challenges facing the medical staff dedicated to the prevention and control of infectious diseases in hospitals is to identify possible sources of infection. In the case of MRSA it has not yet clearly established the role that the hospital environment can play in the maintenance and transmission of this nosocomial pathogen.

Objective: The objectives of this research were to assess the presence and distribution of MRSA in different hospital environments, as well as described the phenotypic and genotypic characteristics of MRSA strains circulating in such hospital settings including veterinary hospitals. This information is key to understand the ecology and epidemiology of MRSA in our hospitals, in order to better design programs that allow cleaning and disinfection more efficiently to control this pathogen.

Methodology: Among the investigated environments were: an university teaching hospital (specifically the infectious diseases unit), a children's hospital (specifically the intensive care unit for infants), an eye clinic, the state system of ambulances, and a veterinary teaching hospital. Specific surfaces belonging to each of these institutions were sampled on a regular basis (monthly or quarterly) for one year.

Result: It was observed that 23.1% (103/446) of the surfaces at the large University Hospital were positive for MRSA. 90% of all strains were classified as Multi-resistant to three or more classes of antibiotics, and they were classified as Hospital Acquired MRSA. This level of contamination was

completely opposite to that observed in the surveillance at the Children's Hospital, where MRSA was detected in only 0.8% (2/225) of the sampled surfaces. The two strains were characterized as HA-MRSA, but their resistance patterns were lower than those observed in the university hospital. In the children's hospital 27.5% of the surfaces were contaminated with *S. aureus* susceptible to methicillin (MSSA). In the Eye Clinic it was found that 4% (5/112) of the surfaces were contaminated with MRSA, which 60% were classified as community-acquired instead of HA-MRSA (40%), and all of them were pansusceptibles. It was also observed a wide variety of clones circulating in that clinic, contrasting with that seen in hospitals where there was little genetic diversity.

Conclusion: Based on these investigations, there is no doubt that MRSA is present throughout the year in the hospital environment, even without being associated with hospital outbreaks. It was also observed that these strains can survive up to 4 months on contaminated surfaces and that these can circulate throughout the hospital, being moved mostly by medical personnel. One can also conclude that each hospital environment has its unique MRSA strains circulating in this population, representing different levels of risk at the time of acquiring a nosocomial infection. Finally, different cleaning and disinfection programs should be customized to each institution according to their level of contamination and their clinical practices.

Keywords: *MRSA; Environment; nosocomial pathogens; United States,*

GUEST4: The New Season of Food Insecurity in Kossoye

(Andrew J. Carlson, Capital University; Michael Austin, Kossoye Development Program; AmsaluFeleke, University of Gondar)

Abstract

Background: Since 2006 the Kossoye Development Program has attempted to understand health and nutritional patterns of people in the Kossoyekebele.

Objective: To explore patterns of food insecurity through the years.

Methods and Results: The study is a qualitative cross-sectional design conducted from May to June of 2013 with 51 interviews with women in 15 of 27 gotts in the Kossoyekebele. The authors walked house to house through neighborhoods with a purposive participant selection. The semi-structured interviews focused on how women saw the status of their own household economies, their family diet, their work as food preparers, and the challenge of securing an adequate food supply. It also asked them to analyze these conditions in comparison to the experiences of their mothers and grandmothers.

Conclusion:The argument made in this paper, based upon these interviews, is that women in the Kossoyekebele view the months of September, October, and November as a new season of food insecurity; that is, a time of food shortages not experienced by their mothers and grandmothers. This paper analyzes how differences in household economies impact food security. It also provides explanations, notably shrinking land resources and greater reliance on markets.

Recommendation:The study suggests practical remedies, including the cultivation of potatoes, squash, and pumpkins.

Key words: Food insecurity, household economies, generational perspectives

2. College of Medicine and Health Sciences, 2013/14

CMHSA1: CAPACITY BUILDING TRAINING FOR TRADITIONAL HEALERS HAS BEEN HELD IN DEMBIA DISTRICT

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Abstract

Background: Traditional medicine has a crucial role in building the health system in developing country. The World Health Organization also recognized traditional medicine as a vital health-care resource in developing countries and has encouraged governments to adopt policies to officially acknowledge and regulate the practice of traditional medicine. Moreover, many of the pharmaceutical products used in modern medicine, have directly or indirectly derived from the knowledge of traditional medicine. However, in many countries, including Ethiopia, there is a critical lack of cooperation between conventional and traditional medicine practitioners. To strengthen this sector, University of Gondar, School of Pharmacy has conducted a capacity building training for traditional healers entitled "*Capacity Building Training for Traditional Healers as Primary Health Care Workers in Gondar Town*" for the first time in May, 2013. Significant improvement in quality of traditional medicine practice in Gondar town was obtained.. All trained healers are now using mortar and pestle for preparation of potions. Increased positive attitude towards ethical principle and patient handling were also obtained. Moreover, effort is ongoing to cultivate medicinal plant in common. Upon the feedback and implementation of the first round, the second round was held in Dembia district between from March 31 to April 04, 2014 in Kolla Diba.

Objective: This project was aimed to enhance the capacity of traditional health practitioners' as primary health workers in the aforementioned town.

Implementation: Prior to actual training, half day sensitization meeting was held with respective stakeholders to design the appropriate training delivery and optimal training time. A total of 20 traditional health practitioners, were trained for five consecutive days, from March 31 to April 04, 2014 in Kolla Diba towe, Dembia district capital.

Conclusion: In general, the practitioners' are eager to adopt standard methods and willing to collaborate with modern medicine. Therefore, we recommended extending such type of training throughout the region/country for better health care of our community.

CMHSA2: Evaluation of antidiabetic, hypoglycemic and glucose tolerance effects of the hydroalcoholic leaf extract of *Otostegia integrifolia* in rodents

Zewdneh S, Aseggedech T, Assefa B, Desalegn A.

University of Gondar, College of Medicine and Health Sciences, Department of Pharmacology

Abstract

Background: The global prevalence of diabetes mellitus for 2010 was 6.4%, affecting 285 million adults aged between 20-79 years and this figure will rise to a prevalence of 7.1% with 439 million diabetic adults by the year 2030. To date there are different groups of oral hypoglycemic drugs for clinical management of diabetes mellitus having characteristic profiles of side effects that are still a challenge to the medical system. Therefore, search for safe and more effective drugs especially natural products which produces minimal or no side effects is vital. In light of this, the present study is aimed at investigating the antidiabetic, hypoglycemic and oral glucose tolerance (OGTT) effects of *Otostegia integrifolia* ('Tinjut') in rodents.

Methods: Animals (rats and mice) were randomly divided into five groups (I-V) for different model tests. In all models, group I received tween 80 (negative control), Group II treated with 5 mg/kg of glibenclamide (positive control) and the remaining three groups were receive the plant extract at doses of 100mg/kg (OI100), 200mg/kg (OI200) and 400mg/kg (OI400) respectively. The antidiabetic effect of the extract was done using streptozotocin induced diabetes mellitus model. Similarly, hypoglycemic and oral glucose (OGTT) tests were carried out according to pre-established protocols. Data was analyzed by SPSS version-20 using one way ANOVA followed by Tukey's post hoc test to carry out between and within group comparisons.

Results: inter-group analysis revealed that streptozotocin induced hyperglycemia was reduced significantly (58.7%; $p < 0.001$) by glibenclamide compared to the negative control at 3h.

Similarly, OI 100 and OI 200 were able to lower the 4th hour fasting blood glucose level significantly ($p<0.001$) compared to the control group. The intra-group result has shown OI100 and OI200 produced a significant ($p<0.05$) reduction in BGL at the 1st, 2nd, 3rd and 4th hours of post treatment compared to their respective initial levels. Moreover, in the hypoglycemic and OGTT models, *O. integrifolia* extract at 200mg/kg, has shown a considerably significant reduction in blood glucose levels compared to negative controls and across all time points.

Conclusion: The crude extract of *O. integrifolia* has shown significant antidiabetic, hypoglycemic and oral glucose tolerance improving effects. The effective dose of the extract was found to be 200 mg/kg. Therefore, this plant could be new sources for development of new plant based drug therapy for management of diabetes.

Key words: Diabetes mellitus, *Otostegia integrifolia*, Streptozotocin, Mice, Rats, Ethiopia

CMHSA3: PREVALENCE AND ASSOCIATED FACTORS OF COMMON MENTAL DISORDERS AMONG PATIENTS ADMITTED IN GONDAR UNIVERSITY HOSPITAL, NORTHWEST ETHIOPIA, 2013.

Wondale Getinet (MSC ICCMH), Yewunetu Dessalegn (MPhil)

Abstract

BACKGROUND: Common mental disorders are a group of distress states manifesting with anxiety, depressive and unexplained somatic symptoms typically encountered in community and health care settings.

METHODS: A cross sectional study was conducted in Gondar university hospital from April 15-May 15, 2013. We interviewed 418 hospital admitted patients 263 patients from medical ward, 155 from surgical ward with Systematic Random sampling through face to face interviews by trained clinical nurses using SRQ-25. SRQ contains items associated with anxiety, depression and somatic symptoms. Some risk factors for Common mental disorder were assessed.

RESULTS: Using a cut-off point ≥ 8 , 58.6% of admitted patients had symptoms of common mental disorder. Individuals who had previous hospital admission with [AOR=1.7, 95%CI (1.11, 2.73)], being female [AOR=2, 95%CI (1.26, 3.12)] were more likely to have Common mental disorders than those who have no previous hospital admission and males. Widowed [AOR=2.8, 95%CI (1.1, 7.20)], life time tobacco use [AOR=4, 95%CI (1.1, 15.28)], life time alcohol

use [AOR=3,95%CI(1.82,4.69)], hospital stays one to two weeks [AOR=2.3,95%CI(1.4,3.8)], three to four weeks [AOR=2,95% CI(1.18,3.93)] were more likely to have Common mental disorders than those who are single, no tobacco, no alcohol use, hospital stays less than a week respectively. Patients learned to primary school [AOR=0.5, 95%CI (0.26, 0.93)], learned to secondary school [AOR=0.4, 95%CI (0.26, 0.85)] are less likely to have common mental disorders than those who are unable to read and write.

CONCLUSION: The prevalence of common mental disorders on the general medical and surgical wards is highly prevalent and not recognized by health workers on these wards contrary to their common occurrence. Minister of health should develop guide lines to screen and treat CMD among hospital admitted patients. Emphasis on individual who are females, widowed, previous hospital admission, illiterate, substance users and concerning on length of hospital stays

CMHSA4: Post-operative hypothermia in surgical patients of University of Gondar Hospital

Tadesse Belayneh¹, Abebaw Gebeyaw², Zewditu Abdissa³, Takele Yeshewas⁴

Abstract

Background: Unintentional hypothermia (i.e., temperatures<36°C) is a common, yet preventable, event in the immediate postoperative period for surgical patients. However, it is usually diagnosed and treated infrequently. Maintaining normal body temperature throughout all phases of a patient's surgical experience is a critical aspect of care for the perioperative surgical team. Depending on specific situations and procedures, hypothermia may be beneficial or noxious for the patient.

Objective: The main aim of this study was to identify magnitude and factors affecting postoperative hypothermia in surgical patients.

Methods: Institution based cross sectional study was conducted from November to December 2014 at University of Gondar referral Hospital. All consecutive postoperative (N= 384) surgical patients who undergo scheduled or emergency surgery were included. Tympanic membrane body temperature was measured before surgery and on arrival at Recovery Room by clinical nurses. Analysis was done using SPSS version 20. Binary logistic regression was used to assess the relationship between variables.

Result: According to the definition of $T_{c36.0^{\circ}\text{C}}$, prevalence of hypothermia on recovery room was 43.2 %. Multiple logistic regression showed that major surgery (AOR 2.3, 95% CI, 1.3-4.1), general anaesthesia (AOR 2.0, 95% CI, 1.2-3.4), male gender (AOR 1.9 , 95% CI, 1.2-3.1) and ASA > II (AOR 2.9, 95% CI 1.7-5.0) were a significant predictive factors of postoperative hypothermia . But emergency surgery was a protective factor (AOR 0.5, 95% CI 0.3-0.8).

Conclusion and recommendation: Postoperative hypothermia at admission to the recovery room was still frequent. High ASA physical status, use of general anesthesia, extensive surgery, male and younger age was associated with postoperative hypothermia. To reduce the occurrence, more efforts and concern should be taken, especially in the patient with high risk factors.

Key words: Postoperative Hypothermia, Recovery Room, Surgical patients.

CMHSA5: Magnitude of injury and associated factors among patients visiting the emergency departments of Amhara regional state referral hospitals, Ethiopia, 2014.

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Abstract

Back ground: Injury is a significantly affecting the health and wellbeing of the society. Even though no one is immuned for injury, the prevalence tends to be higher in the low income countries.

Objective: This study was aimed to assess the prevalence of injury and associated factors among patients visiting emergency departments of Amhara Regional State referral hospitals.

Methods: Institution based cross sectional study was undertaken from March to April 2014. Patients visiting the emergency department during the study period were study population and systematic random sampling technique was employed to select study units. The data was collected using pretested standard interviewer administered questionnaire. Proportion of injury patients was calculated and association between dependent and independent variables was checked using both binary and multiple logistic regressions. Strength of association was presented using odds ratio and 95% confidence interval with p-value is < 0.05.

Result: The overall prevalence of injury was 230 (55.6%). The most frequent cause of injury was assault comprising 37.4% followed by road traffic injury 33.9%. Unintentional injuries contribute for 71.7% of all cases. In the multivariate analysis it is found that odds of injury

increased for males ($P = 0.001$, AOR = 2.834; 95% CI, 1.794-4.474). Monthly income less than 650ETB (34.2\$) ($P = 0.025$, AOR = 1.892; 95% CI, 1.035-3.458), those reporting their age between 19 to 44 years old ($P = 0.035$ (AOR = 2.259; 95% CI, 1.061-4.81) being a daily labourer ($P < 0.001$, AOR = 6.27; 95% CI, 2.386-16.476) being a farmer ($P = 0.008$, AOR = 2.9; 95% CI, 1.315-6.412) and being a substance user ($P = 0.012$ AOR=2.164; 95% CI, 1.181-3.966) were significantly associated with injury.

Conclusion and recommendation: The magnitude of injury in the referral hospitals of Amhara Regional State is considerably high. Age, sex, income, occupation and substance use were significantly associated with injury. Hence appropriate injury prevention strategy should be designed against assault and road traffic injuries. Every effort should address the vulnerable group and also counselling about substance use and awareness about injury prevention mechanisms shall be created and strengthened in the society.

Key words: Hospitals, Injury, Prevalence, Trauma.

CMHSA6: Willingness to receive text message medication reminders and associated factors among patients on Antiretroviral Treatment, North West Ethiopia

Mihiretu Molla, Atinkut Alamirew Zeleke, Mulusew Andualem Asemahagn, Fleur Fritz

Abstract

Background: Non Adherence to Antiretroviral Treatment (ART) and missing doses are strongly associated with virologic rebound and drug resistance. Evidences have shown that most frequently mentioned reason for missing ART doses is forgetfulness of patients to take their medications on time. Therefore using communication devices as reminding tools (alarms, pagers, text messages and telephone calls) could improve adherence on ART. The aim of this study is to measure access to mobile phones, willingness to receive text message medication reminders and identify associated factors of ART patients at University of Gondar Hospital, North West Ethiopia, 2014.

Methods: An institution based cross sectional quantitative study was conducted among 423 patients on ART at the University of Gondar Hospital in April 2014. Data were collected using structured interviewer-administered questionnaire. Data entry and analysis were done using Epi-Info version 7 and SPSS version 20 respectively. Descriptive statistics and multivariable logistic regression analysis was used to describe the characteristic of the sample and identify factors associated with willingness to receive text message medication reminders.

Results: A total of 415 respondents consented to give the interview. The majority of respondents 316 (76.1%) owned cellphone, 161(50.9%) were willing to receive text message medication reminders. Positively associated factors to the willingness were the following: Younger age group (AOR= 5.18, 95% CI: [1.69, 15.94]), having secondary or higher education (AOR=4.61, 95%CI: [1.33, 16.01]), availability of radio in dwelling (AOR=2.74 95%CI: [1.27, 5.88]), missing to take medications (AOR=2.13, 95%CI: [1.14, 3.96]), not disclosing HIV status (AOR=3.03, 95%CI: [1.20, 7.61]), use of cellphone alarm as medication reminder (AOR=2.22, 95%CI [1.09, 4.52]), not answering to unknown calls (AOR=2.67, 95%CI: [1.34, 5.32]) and using internet (AOR=3.94, 95%CI: [1.67, 9.31]).

Conclusions: A high proportion of respondents have cell phone and are willing to receive text message medication reminders. Therefore implementing text message medication reminders could improve the patients' adherence to ART. It is also important to have an optional voice call or voice message medication reminders intervention strategy for patients who cannot be able to use text messages.

CMHSA7: Assessment of knowledge, attitude and practice (KAP) towards infection prevention among Medical Laboratory Workers in Gondar University Hospital, Gondar, North West Ethiopia.

Habtu Debash^{1*}, Chandrashakhar Unaka² and Yihenew Million²

Abstract

Introduction: Infection prevention and control is a program of disease surveillance generally with in health care facilities, designed to investigate, prevent and control the spread of infections and their causative micro-organisms. Nosocomial infections have been recognized for hundred fifty years, but they remain a hazard to both health workers and patients. Laboratory workers are performing clinical procedures or other activities that can expose themselves and clients to potentially infectious micro-organisms. So, they are on the front of protecting themselves and clients from infectious diseases.

Objective: This study was aimed to assess knowledge, attitude and practice towards infection prevention among Medical Laboratory workers in Gondar University Hospital, North West Ethiopia.

Methodology: A hospital based prospective cross-sectional study was conducted among Medical Laboratory Workers about their knowledge, attitude, and practice towards infection prevention in

Gondar University Hospital. The data was collected by using self-administered semi-structured questionnaire from February to April, 2014. The data was analysed using SPSS version 16. In all cases P- value less than 0.05 was taken as statistically significant. Finally the findings explained in words, tables and other statistical summary techniques.

Results: A total of 65 subjects were included in this study, 44(67.7%) were males and 21(32.3%) were females participated in the study. Majority 48(73.8 %) of the participants were aged 20-30 years, 90.8% Orthodox Christian and the majority (72.3%) were first degree. Among these laboratory workers, 58.5% have been working for 1-4 years. The result indicated that 24 (36.9%) of medical laboratory workers were knowledgeable about infection prevention and attitude of study subjects revealed that 38(58.5%) were having good attitude towards infection prevention. Majority (83.1%) of the respondents had good practice about infection control.

Conclusion: Knowledge about infection prevention among these highly exposed laboratory workers is low. This implies that creating awareness which is being given about infection prevention by hospital management and other body is still not deep enough for understanding laboratory acquired infection prevention.

Key words: KAP, Infection and prevention, laboratory workers, Ethiopia

CMHSA8: Food Safety Knowledge, Attitude, Practices and Associated Factors of Food Handlers Working in Substandard Food Establishments in Gondar Town, Northwest Ethiopia, 2013/14

Zemichael Gizaw, Mulat G/ Hiwote, Daniel Haile ,Zinabu Teka

Abstract

Introduction: Food safety is an increasingly important public health issue to prevent or control food borne illnesses. Food borne diseases are a widespread and growing public health problem both in developed and developing countries. The global incidence of food borne disease is difficult to estimate, but it has been reported that 2.1 million people died each year from diarrheal diseases. A great proportion of these cases can be attributed to contamination of food and drinking water.

Objective: This study was conducted to assess food safety knowledge, attitude, practices and associated factors of food handlers working in substandard food establishments of Gondar town, Northwest Ethiopia, 2013/14.

Methods: Institution based cross sectional study design was conducted to assess food safety knowledge, attitude, practices and associated factors of food handlers. Four hundred three food handlers were taken randomly as study subjects and data were collected by face to face interview and observation by using standardized questionnaire and observational check list. Ordinal logistic regression model was fitted to analyze the predictor variables.

Results: The overall level of food safety knowledge (high level - 47.40%, moderate level- 41.70% and low level - 10.90%), attitude (positive - 31.80%, neutral - 65% and negative - 3.20%) and practice (good – 30.30%, fair- 47.60% and poor – 22.10%) were reported. Among the food handlers who had moderate or high level knowledge, only 85 (23.68%) of the handlers had deep knowledge and the rest have superficial knowledge.

Of a number of predictor variables analyzed educational status, food safety information, feedback from consumers, supervision by manager or owner, food hygiene and safety training and attitude were the identified factors affecting food safety knowledge of the food handlers. On the other way age, marital status, service year, monthly income, food hygiene and safety training, attitude, knowledge and depth of knowledge were also identified as factors affecting food safety practices.

Conclusion: Compared to other similar studies, Low level of food safety knowledge (high level - 47.40%, moderate level- 41.70% and low level - 10.90%), attitude (positive - 31.80%, neutral - 65% and negative - 3.20%) and practice (good – 30.30%, fair- 47.60% and poor – 22.10%) were reported. Among the food handlers who had moderate or high level knowledge, the highest proportion of food handlers (76.32%) have superficial knowledge.

CMHSA9: Stress and coping among hospital nurses, at Gondar University and felege hiwot referral hospitals, amhara, Ethiopia (FISSIHA ZEWDU)

Abstract

Background Stress first coined in the 1930s, has in more recent decades become commonplace in popular parlance. Stress could be defined simply as the rate of wear and tear on the body systems caused by life. It occurs when a person has difficulty dealing with life situations, problems and goals. Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. Work-related stress has been

implicated as a major contributing factor to growing job dissatisfaction, rapid turnover, and high attrition rates among nurses.

Objective: This study was designed to determine Sources of occupational stress and coping strategies among nurses who are working at Gondar University and Felege Hiwot Referral Hospitals, Amhara Region, Ethiopia.

Methodology: An institution based cross- sectional study was conducted from January to February, 2012 G.C among nurses who work at Gondar University and Felege Hiwot referral hospitals. For the purpose, a total of 268 Nurses were involved in the study. Standardized self - administered questionnaires including Nursing Stress Scale and Ways of Coping Checklist were distributed among the nurses. In order to check the clarity of the questionnaires, pre test was conducted on nurses in Debarq Hospital, Debarq Town. Then the survey was conducted immediately after amending the questioners based on the feedback from the pre test. Statistical analysis of the data were conducted using Statistical Package(SPSS 20) for the demographic profile of the participants, the frequency of the adopted coping strategies and the mean scores (and standard deviation) of sources of stress. Analytical statistics ANOVA and independent t-test were done to compare relationship among variables.

Result: The greatest proportion of respondents was women (59.7%), Orthodox (97.4%), age between 23-35(63.1%) years, had less than 5 years of experience (44%). The following stressors were identified: death and dying, work load and uncertainty regarding treatment of a patient. The most common strategy used by nurses was problem-solving, Seeking social support and accepting responsibility and the strategy least used were escape avoidance. In this study large proportion of nurses used Problem-focused approaches but an emotion-focused strategy were generally less used.

Conclusion: It was concluded that sampled nurses are highly stressed. And it was also concluded that the coping scales, problem-solving and seeking social support are extremely important in nurses. And therefore they should be sent for courses on human behaviour, resource management, interpersonal relation, stress management and crisis interventions.

CMHSA10: Assessment of the Knowledge and Skill Levels of Health Professionals about Neonatal Resuscitation at the University of Gondar Teaching Hospital, Northwest Ethiopia, 2014.

Habamu Getinet, Endale G/Egziabher, Aduana Aregawi

Abstract

Background: Competence in neonatal resuscitation, which addresses the most urgent pediatric clinical situation, is critical in the delivery rooms, maternity wards, neonatology units and paediatrics intensive care units to ensure the safety and health of newborns and neonates. Each year approximately 10 million babies do not breathe immediately at birth, of which about 6 million require basic neonatal resuscitation. Perinatal asphyxia is a major contributor to the nearly 4 million neonatal deaths worldwide each year in resource-limited settings. Neonatal resuscitation, a proven method for preventing newborn deaths, is effective only when the health professionals have sufficient knowledge and skill about neonatal resuscitation. In the University of Gondar teaching hospital, we see malpractices on the resuscitation of newborns and neonates by health professionals.

Objective: To assess the knowledge and skill levels of health professionals about neonatal resuscitation.

Methods: Hospital based cross-sectional study was conducted in the University of Gondar teaching hospital from February 15 to April 30, 2014. Self administered questionnaire used for data collection. All nurses, midwives and residents from Obs-gyn, midwifery and paediatrics departments were included. The mean knowledge and skill scores were compared for sex, age, type of profession, qualification, year of service and previous place of work of the participants using Student's t- test and ANOVA with Scheffe's test. P value <0.05 was considered statistically significant.

Results: One hundred and thirty five out of 150 participants were included in this study with a response rate of 90.0%. Males accounted 58.5% of the participants. The overall mean knowledge and skill scores of midwives, nurses and residents were 19.9 (SD=3.1) and 6.8 (SD=3.9) respectively. The mean knowledge scores of midwives, nurses, paediatrics residents and obs-gyn residents were 19.7 (SD=3.03), 20.2 (SD=2.94), 19.7 (SD = 4.4) and 19.6 (SD= 3.3)

respectively. Whereas the mean skill scores of midwives, nurses, paediatrics residents and obs-gyn residents were 7.1 (SD=4.17), 6.7 (SD=3.75), 5.7 (SD= 4.17) and 6.6 (SD=3.97) respectively.

Conclusion and recommendations: The knowledge and skill levels of midwives, nurses and residents about neonatal resuscitation were insufficient. Training about neonatal resuscitation for midwives, nurses and residents should be emphasized.

Keywords: Neonatal resuscitation, knowledge, skill, health professionals

CMHSA11: Why is perinatal mortality higher among women delivered at health facility in rural Northwest Ethiopia? A qualitative Study
Gashaw Andargie^{1*}, Yemane Berhane², Alemayehu Worku³ and Yigzaw Kebede¹

Abstract

Background: : In Northwest Ethiopia, perinatal mortality is the highest in rural areas where access to emergency obstetric care service is inhibited by poverty and ignorance, which lead to inappropriate health seeking delivery behaviors. Moreover, half of perinatal deaths are the result of poorly managed institutional deliveries.

Objectives: The study investigated the reasons for high perinatal deaths among institutional delivery in rural Northwest Ethiopia.

Methods: Qualitative in-depth interviews and record review from health institutions were conducted with 11 survivors of obstetric complications and 11 normal home deliveries. The interviews were translated into English and transcribed verbatim. We used open code and content analysis to identify the research outcome.

Results: Delay in recognizing danger signs of pregnancy/labour and decision to seek care outside the home were the primary reason. It is observed that, most women are visiting health institutions if they have complicated labor. Late health seeking behavior, lack of transport and finance and poor quality of the health facility services are the major causes of high perinatal deaths at health facility.

Conclusion and recommendations: Recognizing danger signs of pregnancy/labour and quality of health care and timely accessing emergency obstetric care are critical activities to decrease

perinatal deaths. Thus, prompt decision-making and improved quality of health care services in the study area are highly recommended to improve perinatal outcomes in rural Ethiopia.

Key words: Qualitative study design, skilled birth attendance, in-depth interview, place of delivery

CMHSA12: Population dynamics in Dabat District, Northwest Ethiopia: Four years surveillance report of the period 2008 to 2012

Yizgaw Kebede, Tesfahun Melese, Yiforkir Tefera, Tadesse Awoke, Solomon Meseret, Abebaw Gebeyehu, Digsu Negesse, Getu Degu, Solomon Mekonnen, Berihun Megabiaw, Temesgen Azmeraw, Gashaw Andarge, Sisay Yifru, Afework Kassu, Tefera Abula, Mengesha Admassu, Shitaye Alemu, Takele Tadesse, Assefa Getachew, Belaynew Wassie, Solomon Amsalu, Kassahun Alemu, Mamo Wubshet, Mezgebu Yitayal

Abstract

Introduction: Cognizant of the lack of information on health and population dynamics, 6 universities in Ethiopia established HDSS among which is Dabat HDSS which was launched in 1996 by the then Gondar College of Medical Sciences. The objective of this report is to describe the population dynamics in Dabat District.

Methods: A population based surveillance system has continued in Dabat District after conducting re-census in February 2008. Data has been collected by trained data collectors every 6 months. This report included analysis of follow up data from September 11, 2008 to September 10, 2012. The population counts reported were the mid-year populations based on the Ethiopian calendar. The Ethiopian New Year (Meskerem 01) is usually September 11 (G.C) but falls on September 12 in years before the Gregorian leap year. Data entry was done using HRS2 based DRC software and analyzed using STATA.

Results: The population counts were 45402 in 2008/09, 45899 in 2009/10, 46192 in 2010/11, and 47178 in 2011/12. The CBR ranged from 25.7 in 2010/11 to 31.2 births/1000 population in 2009/10. Similarly, TFR ranged from 3.7 in 2010/11 to 4.5 in 2009/10. Overall, 1236 deaths occurred from September 11, 2008 to September 10, 2012. CDRs were 6.7 in 2008/09, 8.0 in 2009/10, 6.0 in 2010/11, and 6.1 per 1000 population in 2011/12. IMR decreased from 70.4 in 2008/09 to 58.1 per 1000 live births in 2011/12. The net-migration rates were positive in the

urban areas except in 2008/09 where it was -41.7. But in the rural areas the net-migration rates were negative throughout the study period. Migration rates were high in the age groups 20-29 and females. The major reason for external migration was search for work. The rates of natural increase were 2.1 in 2008/09, 2.3 in 2009/10, 2.0 in 2010/11, and 2.2 per 1000 population in 2011/12. The net growth rate in 2011/12 was 2.0%.

Conclusion: While the decreases in fertility rates were not remarkable there were substantial reductions in childhood mortality rates. The net external migration rates were negative over the entire surveillance period. The District Health Office and the health institutions in the area with other stake holders need to maximize their curative, preventive, and promotive health services to significantly reduce the fertility and mortality rates. Further standardization and research on migration is also recommended.

Key words: Population dynamics; Dabat HDSS; Fertility; Mortality; Migration

CMHSA13: Incidence of Interpersonal Violence Related Injury and Associated Factors Among Patients Visiting the Emergency Department of University of Gondar Hospital, Northwest Ethiopia.

Bewket Tadesse Tiruneh^{1§} Berihun Assefa Dachew² Berhanu Boru Bifftu³ Mengistu Mekonnen Kelkay⁴ Kasaw Adane⁵

Abstract

Background: Interpersonal violence is a cause of suffering and trauma which has devastating consequences for the mental, physical and sexual health of the victim. Moreover, it is leading cause of injury in east Africa. The objective was to study the incidence of interpersonal violence related injury and associated factors among patients visiting the Outpatient Department of University of Gondar Hospital, Northwest, Ethiopia.

Methods: A cross-sectional institutional based study design was employed from November 1 – June/2014. The source population was all injured patients. Study period was from November 1 – June 30. Data was collected using injury surveillance guidelines developed by World Health organization. Bivariate and multivariate logistic regressions were performed to identify the presence and strength of association. Odds Ratio with 95% confidence interval was computed to determine the level of significance.

Results: The overall incidence of interpersonal violence related injury was 28.5%. Multivariate logistic regression shows that conflict in the family prior to the event [AOR= 9.996(95%CI: 4.433-22.536)], Poor behavioral control [AOR=2.551(95%CI:1.192. -5.460)], Alcohol use [AOR=3.406(95%CI:1.813-6.398)] and paternal education [AOR=2.441(95%CI: 1.209-4.929)] were found independently associated with interpersonal violence related injury.

Conclusion and recommendation: The incidence of interpersonal violence related injury in the Emergency Department was high. Counseling and Education on conflict resolution methods should be given for the community using mass media.

Keyword: Incidence, Interpersonal violence, factors, emergency department.

CMHSA14: Prevalence of mental distress and associated factors among undergraduate students of University of Gondar, Northwest Ethiopia: a cross-sectional institution based study

Berihun Assefa^{1*}, Telake Azale, Resom Berhe

Abstract

Introduction: Although mental health problems affect society as a whole and no group is immune to mental disorders; today in ultra competitive environment students have significantly high level of mental distress than their community peers.

Objectives: The purpose of this study was to assess the prevalence and associated factors of mental distress among University of Gondar, undergraduate students, Northwest Ethiopia.

Methods: Institution based cross sectional study was conducted among 836 students from April 9-11/2014. Stratified sampling followed by simple random sampling technique was used to select the study participants. Data were collected using pretested and structured self-administered questionnaire. Bivariate and multivariate logistic regression model was fitted to identify factors associated with mental distress among students. An adjusted odds ratio with 95% confidence interval was computed to determine the level of significance.

Result: Prevalence of mental distress among students was found to be 40.9%. Female sex (AOR=1.65; 95% CI 1.17-2.30), lack of interest towards their field of study (AOR=2.28; 95% CI 1.49-3.50), not having close friends (AOR=1.48; 95% CI 1.03-2.14), never attend religious programs (AOR=1.58; 95% CI 1.02, 2.46), conflict with friends (AOR=1.93; 95% CI 1.41-2.65),

absence of pocket money(AOR=1.53; 95% CI 1.09-2.14), family history of mental illness (AOR=2.12; 95% CI 1.31-3.45), Ever use of Khat (AOR=1.71; 95% CI 1.12-2.59), decrease grade than anticipated(AOR=2.07; 95% CI 1.51-2.83), lack of vacation or break (AOR=1.46; 95% CI 1.06-2.02) , low social support (AOR=2.58; 95% CI 1.58-4.22) and moderate social support(AOR= 2.50;95% CI 1.54, 4.04) were significantly associated with mental distress.

Conclusion: The overall prevalence of mental distress among students was found to be high. Being female sex , lack of interest towards the field of study, not having close friends, never attend religious programs, conflict with friends, absence of pocket money, family history of mental illness, ever use of Khat, decrease grade than anticipated, lack of vacation or break, and low to moderate social support were factors associated with mental distress.

Key words: Mental distress, students, University of Gondar

CMHSA15: Ethnopharmacologic Survey of Medicinal Plants Used To Treat Human Diseases Traditional Medical Practitioners In Dega Damot Woreda, West Gojjam Zone, Amhara, North Western Ethiopia
Muluken Wubetu, Tefera Abula

Abstract

Background: Medicinal use is one of the services that plants provide for human welfare. The practice of traditional medicine is common in Ethiopia although it is not utterly studied and documented. Studies conducted so far are limited and focused on the perceptions and practices of modern and traditional health practitioners about traditional medicine.

Objective: the aim of this study is to assess ethnopharmacology of medicinal plants used to treat human diseases by traditional medical practitioners in Dega Damot woreda, West Gojjam zone, Amhara, Northwestern Ethiopia

Materials and Methods: A total of 45 informants (40 men and 5 women) were selected purposefully from the study area. Semi-structured interviewees, observation and field walks were employed from January 10 to February 30/2014. Descriptive statistical methods such as percentage and frequency were employed to analyze and summarize the data.

Results: A total of 60 species of medicinal plants distributed in 42 families were collected and identified for treating 55 human ailments. The most commonly treated ones were evil eye,

malaria, wound, peptic ulcer disease and rabies. The commonly used plant parts were leaves (36.5%) and thirty nine percent of the preparations were decoctions. Oral route, 43 (44%) was the commonly used route of application whereas most (54.8%) remedies were administered on STAT basis. Fourteen percent of preparations caused vomiting in addition most (40.4%) of the formulations was contraindicated for pregnant patients. Only seventeen percent of the formulations possessed drug food interactions. Most preparations were stored within clothes, 31 (29.8%). There exists a high (ICF=0.8) uniformity of plant consumption among healers for treating respiratory problems. *Alliumsativum* (FI=0.75) for evil eye, *Phytolacca dodecandra* (FI=0.8) for rabies and *Croton macrostachyus* (FI=0.78) for treating malaria were medicinal plants with highest fidelity levels. The principal threats of medicinal plants were reported to include drought, overgrazing and firewood collection.

Conclusion and Recommendation: Dega Damot woreda is rich in its medicinal plant composition and the associated indigenous knowledge though medicinal plants are highly affected by drought, overgrazing and firewood collection. Awareness should thus be created among the woreda's community by concerned bodies regarding the usefulness of medicinal plants. The efficacy and safety of the claimed medicinal plants need to be evaluated before recommending them for a wider use.

Key words: medicinal plant, traditional medical practitioner, ethnopharmacology

***CMHSA16: SCREENING ANTIBACTERIAL EFFECTS OF ROOT EXTRACTS
OF SENNA SINGUAENA AND EUCLEA RACEMOSA SUBSP. SCHIMPERI
TEKLAY G/MARIAM, TEFERRA ABULA (PHD)***

Abstract

INTRODUCTION: Infectious diseases have continued to be prominent causes of many health problems and problem of resistant strains to multiple drugs (MDR) is increasing and their control is a constant challenge. Medicinal plants have provided a good source of antibacterial agent.

OBJECTIVE: The aim of this study was, therefore to screen the antibacterial effect of the roots of *Euclea racemosa* and *Senna singueana* which were collected aseptically from and around the Aksum town on October 2006 E.C. The collected roots were dried in an open air at room temperature protected from direct sun light. The dried material was powdered with a mechanical grinder. The powder was stored in a sterile bottle at room temperature in dark place up to the

extraction day. Macerating using 80% methanol, chloroform and acetone; fractions of the plants' root were prepared and investigated for their *in vitro* antibacterial activities against gram-positive and gram-negative bacterial strains by agar disc and well diffusion method. The results were explained in terms of MIC, MBC and inhibition zone.

RESULT: Among the extraction solvents the methanol extract of *E.racemosa sub sp. Schimperi* was significantly active against gram-negative bacterial strains [*S.typhi*, *P. aeruginosa*] and gram-positive bacterial strains [*S.pneumoniae*]. The chloroform extract of *E.racemosa sub sp. Schimperi* was significantly active against gram-negative strains of [*S.typhi*, *K.pneumoniae*]. The methanol extract of *S.singueana* was active against gram-positive strains of [*P.aeruginosa*] and gram-positive strains of [*S.pyogenes*]. The chloroform extract of *S. singueana* shows significant activity against gram-positive strains of [*S.pneumoniae*, *S.pyogenes*]. The acetone extract of *S.singueana* was active against gram-negative strain [*P.aeruginosa*]. *S.aureus* was not significantly sensitive against acetone extracts of *E.racemosa sub sp.schimperi* and *S.singueana*. *S. pneumoniae* was not significantly sensitive against acetone extract of *E. racemosa schimperi* and *S. singunnae*. *K.pneumoniae* was not significantly sensitive against methanol extract of *E.schimperi* and *S. pyogens* was not significantly sensitive against all extracts of *E.racemosa sub sp.schimperi* and *S.singueana*, *P.aeruginosa* was not significantly sensitive against acetone extract of *E.racemosa sub sp.schimperi*. The extracts of the two plants were safe in albino mice during acute toxicity test.

CONCLUSION: The present study revealed that the presence of phytochemicals such as phenols, tannins, terpenoids, flavonoids and alkaloids in the roots of *S.singueana* and *E.racemosa subsp.schimperi*; which may be responsible for the antibacterial effects of these plants justify the traditional use and its potential for the treatment of infections of wound and infectious diarrhea.

Key words: *E.racemosa*, *S.singueana*, antibacterial activity, Phytochemicals, Disc diffusion, MIC, MBC

CMHSA17: Assessment of the attitude and practice of nurses on wearing nurse uniform and associated factors in hospitals of North West Ethiopia.

Etaferahu Alamaw,¹Berihun Assefa²,Sr.Mignot Hailu³

Abstract

Introduction: Wearing uniform is a form of communication about what that individual's responsibility is. Such communication takes place among the wearer, the organization and the public in general. However there were no studies so far in Ethiopia which assessed attitude and practice of wearing Nurse Uniform.

Objectives: To assess the attitude and practice of nurses on wearing nurse uniform and associated factors in hospitals of North West Ethiopia.

Methods: Hospital based cross-sectional study was conducted from March to April, 2014 in five hospitals located in Northwest Ethiopia. A total 459 nurses participated in the study. Self-administered questionnaire was used for data collection. Bi-variate and multivariate logistic regression were used to assess the association of different variables with attitude and practice on wearing nurse uniform.

Results: Out of 459 nurses, 226 (49.2%) wear nurse uniform. The most important reason for not wearing nurse uniform was "there is no specific uniform for nurses which is recommended by the hospital management (35.2%)". About 74% had favorable attitude on wearing nurse uniform. Sex, type of hospital and study nursing by preference showed significant association with attitude on wearing nurse uniform. Females had more favorable attitude on wearing nurse uniform (AOR=2.96) males. Similarly, sex, type of hospital, studied nursing by preference, and attitude towards wearing nurse uniform showed significant association with nurse uniform wearing practice.

Conclusion and recommendation: More than half of the nurses were not wearing nurse uniform, the main reason being 'there is no specific uniform for nurses which is recommended by the hospital management'. More than one-fourth of the nurses have unfavorable attitude on wearing nurse uniform. Sex, type of hospital, and studying nursing by preference were the most important factors associated with attitude and practice of wearing nurse uniform. Attitude

towards wearing nurse uniform also had effect on practice of wearing nurse uniform. Developing uniform wearing policy and guideline; favoring the females to study and practice nursing; reaching consensus with nurses on the type of uniform to be worn by the nurses are among the recommendations to solve the problem.

CMHSA18: Comparison of Giemsa microscopy with nested PCR for the diagnosis of malaria in North Gondar, North-west Ethiopia

Abebe Alemu¹, Hans-Peter Fuehrer², Gebeyaw Getnet^{1*}, Afework Kassu³, Sisay Getie¹, Harald Noedt⁴

Abstract

Background: Malaria remains one of the leading communicable diseases in Ethiopia. Early diagnosis combined with prompt treatment is one of the main strategies for malaria prevention and control. Despite its limitation, Giemsa microscopy is still considered to be the gold standard for malaria diagnosis. This study aimed to compare the performance of Giemsa microscopy with nested polymerase chain reaction (nPCR) for the diagnosis of malaria in north-west Ethiopia.

Methods: A cross sectional study was conducted in public health facilities in North Gondar, from March 2013 to April 2013. A total number of 297 subjects with suspected malaria were enrolled in the study. Finger-prick blood samples were collected and examined for *Plasmodium* parasites using Giemsa microscopy and standard nPCR.

Results: Among the study participants, 61.6% (183/297) patients tested positive for malaria by Giemsa microscopy of which, 72.1% (132/183) and 27.9% (51/183) were diagnosed as *Plasmodium falciparum* and *Plasmodium vivax*, respectively. By nPCR, 73.1% (217/297) were malaria-positive. Among microscopy-negative samples, 13.1% (39/297) samples turned malaria-positive in nPCR. In nPCR, the rate of mixed *Plasmodium* infections was 4.7% (14/297) and 3.03% (9/297) were positive for *Plasmodium ovale*. Using nPCR as reference the sensitivity, specificity, positive predictive and negative predictive values of Giemsa microscopy were 82.0%, 93.8%, 97.3% and 65.8%, respectively, with a good agreement ($\kappa=0.668$) to nested PCR. The sensitivity and specificity of Giemsa microscopy in identifying *P. falciparum* infections were 74.0% and 87.4% and 63.2% and 96.5% for *P. vivax* infections, respectively.

Conclusion: Although Giemsa microscopy remains the gold standard for malaria diagnosis in resource-limited environments, its sensitivity and specificity as compared to nPCR is limited suggesting exploration of novel rapid and simplified molecular techniques for malaria-endemic countries. A high rate of misclassification and misidentification highlights the importance of adequate training for staff involved in malaria diagnosis.

CMHSA19: Plasmodium Ovale Curtisi and Plasmodium Ovale Walikerii in North West Ethiopia

Abebe Alemu¹, Hans-Peter Fuehrer², Gebeyaw Getnet^{1*}, Belay Tessema, Sisay Getie¹, Harald Noedl⁴

Abstract

Background: In Ethiopia *Plasmodium falciparum* and *Plasmodium vivax* are the dominant species accounting for roughly 60 and 40% of malaria cases, respectively. Recently a major shift from *P. falciparum* to *P. vivax* has been observed in various parts of the country but the epidemiology of the other human malaria species, *Plasmodium ovale* spp. and *Plasmodium malariae* remains poorly understood. The aim of this study was to assess *P. ovale curtisi* and *walikeri* infection in north-west Ethiopia by using microscopy and nested PCR.

Methods: A health institution-based survey using non-probability sampling techniques was conducted at Maksegnat, Enfranze and Kola Diba health centres and Metema hospital in North Gondar. Three-hundred patients with signs and symptoms consistent with malaria were included in this study and capillary blood was collected for microscopic examination and molecular analysis of *Plasmodium* species. Samples were collected on Whatman 903 filter papers, stored in small plastic bags with desiccant and transported to Vienna (Austria) for molecular analysis. Data from study participants were entered and analysed by SPSS 20 software.

Results: Out of 300 study participants (167 males and 133 females), 184 samples were classified positive for malaria (133 *P. falciparum* and 51 *P. vivax*) by microscopy. By species-specific PCR 233 *Plasmodium* spp (95% CI: 72.6-82) were detected and the majority 155 (66.5%, 95% CI:

60.2-72.3) were *P. falciparum* followed by *P. vivax* 69 (29.6%, 95% CI; 24.1-35.8) and 9 (3.9%, 95% CI: 2-7.2) samples were positive for *P. ovale*. Seven of *P. ovale* parasites were confirmed as *P. ovale wallikeri* and two were confirmed as *P. ovale curtisi*. None of the samples tested positive for *P. malariae*. During microscopic examination there were high (16.3%) false negative reports and all mixed infections and *P. ovale* cases were missed or misclassified.

Conclusion: This study indicates that *P. ovale* malaria is under-reported in Ethiopia and provides the first known evidence of the sympatric distribution of indigenous *P. ovale wallikeri* and *P. ovale curtisi* in Ethiopia. Therefore, further studies assessing the prevalence of the rare species *P. ovale* and *P. malariae* are urgently needed to better understand the species distribution and to adapt malaria control strategies.

CMHSA20: The Effect of Incident Tuberculosis On Immunological Response Of Hiv Patients Taking Highly Active Antiretroviral Therapy At University Of Gondar Hospital, Northwest Ethiopia: A Retrospective Follow-Up Study
Abate Assefa¹, Baye Gelaw¹, Gebeyaw Getnet², Gashaw Yitayew³

Abstract

Background: Human immunodeficiency virus (HIV) infection is usually complicated by high rates of tuberculosis (TB) co-infection. Impaired immune response has been reported during HIV–TB co-infection and may have significant effect on anti-retroviral therapy (ART). TB-HIV co-infection is a major public health problem in Ethiopia. Therefore, the aim of the study was to assess the effect of TB incidence on immunological response of HIV patients during ART.

Methods: A retrospective follow up study was conducted among adult HIV/AIDS patients who started ART at University of Gondar Hospital. Changes in CD4+ T-lymphocyte count and incident TB episodes occurring during 42 months of follow up on ART were assessed. Life table was used to estimate the cumulative immunologic failure. Kaplan-Meier curve was used to compare survival curves between the different categories. Cox-proportional hazard model was employed to examine predictors of immunological failure.

Results: Among 400 HIV patients, 89(22.2%) were found to have immunological failure with a rate of 8.5 per 100 person-years (PY) of follow-up. Incident TB developed in 26(6.5%) of patients, with an incidence rate of 2.2 cases per 100 PY. The immunological failure rate was high (20.1/100PY) at the first year of treatment. Though cox-regression analysis showed borderline

significant association (adjusted hazard ratio (AHR) 2.2, 95%CI 0.94–5.09, $p=0.06$), the risk of immunological failure was significantly higher (38.5%) among those with incident TB compared with TB-free (21.1%) (Log rank $p = 0.036$). Baseline CD4+ T-cell count <100 cells/mm³ (AHR 1.8, 95%CI 1.10–2.92, $p= 0.023$) and being male sex (AHR 1.6, 95%CI 1.01–2.68, $p=0.046$) were found to be significant predictors of immunological failure.

Conclusions: High incidence of immunological failure occurred within the first year of initiating ART. Lower baseline CD4+ T-cell counts of <100 cells/mm³, being male sex and development of TB during ART were associated with impaired immune response. The result highlighted the beneficial effects of earlier initiation of ART on CD4+ T-cell count recovery.

Key words: Anti-retroviral therapy, immunological failure, incident TB

CMHSA21: Partograph utilization and associated factors among obstetric care providers in North shoa zone, Northern Ethiopia, December, 2013.

Negash Wakgari, Mr. Abdella Amano, Mrs. Marta Berta

Abstract

Introduction: Globally, 8% of maternal deaths are contributed by prolonged and obstructed labor which usually leads women to suffer from hemorrhage, uterine rupture, sepsis and obstetric fistula. Furthermore, it is highly associated with perinatal deaths. Therefore; prevention of prolonged and obstructed labor by using simple, inexpensive paper sheet called partograph during labor is a key intervention in reduction of maternal and perinatal mortality.

Objective: This study aimed to assess the magnitude of partograph utilization and associated factors among obstetric care providers in North Shoa Zone, Northern Ethiopia.

Methods: An Institution based cross-sectional study was conducted from June 5-20/2013. Four hundred three obstetric care providers were included in the study. A pre-tested structured questionnaire was used to collect data. Data were entered to Epi Info and exported to SPSS for further analysis. Descriptive and summary statistics were done. Logistic regression analyses were used to see the association of different variables. Odds ratio and 95% Confidence interval were computed to determine the presence and strength of association.

Results: In this study; (40.2%) of obstetric care providers were routinely utilizing partograph during labor. The reasons for not using partograph during labor were using different monitoring tools, lack of trained human power, and shortage of staff and unavailability of partograph. Being midwife (AOR=8.13, 95% CI: 2.67, 24.78), getting on job training (AOR=2.86, 95% CI: 1.69, 4.86), knowledge of obstetric care providers about partograph (AOR=3.79, 95% CI: 2.05, 7.03) and their attitude towards partograph (AOR=2.35, 95% CI: 1.14, 4.87) were significantly associated with partograph utilization.

Conclusion and recommendation: Partograph utilization in labor monitoring was found to be low. Being a midwife by profession, on job training, knowledge and attitude of obstetric care providers were factors affecting partograph utilization that; calls for attention of Zonal Health department and stake holders in building knowledge and improving attitude of obstetric care providers with provisions of on-job training on partograph.

***CMHSA22: Prevalence of Maternal Near misses and associated factors in referral
Hospitals of Amhara Regional State, Northwest Ethiopia, December, 2013
Mulugeta Dile, Mr. Tatek Abate, Mr. Tewodros Seyum.***

Abstract

Introduction: Maternal near misses are one of the quality indicators of obstetric care beside maternal deaths. According to United Nations Fund for Population Activities report in 2011, for each maternal death 20 others suffer due to maternal near misses in the world. Thus, clear understanding on the prevalence and associated factors of maternal near miss is very useful for designing strategies and taking actions to improve the maternal health program, and making valuable changes in public health policy, education and clinical practice.

Objective: The study was aimed to assess the prevalence of maternal near misses and associated factors in Amhara Regional State Referral Hospitals, Northwest Ethiopia.

Methods: An Institution based cross sectional study was conducted from March 2012 to August 2013. During the study randomly selected 806 mothers who visited the maternal health care services at Amhara Regional State Referral Hospitals were included. The data were collected through face to face interviews and direct observations using pre-tested and structured questionnaires. We have used Epi Info 3.5.3 and SPSS for windows version 20 software for data

entry & computing descriptive and analytical statistics respectively. To control the confounding factors, multiple logistic regression models were employed.

Results: The study revealed the overall prevalence of maternal near miss was 23.3 % (95% CI = 20%, 26%). No formal education (AOR = 2.00,95%CI:1.09,3.69), ≥ 7 days of hospital stay (AOR = 2.49, 95% CI: 1.46,4.25), not booked (AOR = 2.51,95% CI: 1.50,4.20), presence of administrative related factors (AOR = 3.85,95% CI 2.11, 7.03), personal factors (AOR = 4.02,95% CI: 2.34, 6.90), community related factors (AOR = 3.28,95% CI 1.67, 6.46) and medical personnel related factors (AOR = 7. 02 95% CI: 3.89,12.65) were significantly associated with maternal near misses.

Conclusion and recommendations: This study indicates that the prevalence of maternal near miss is high. Reduction in maternal near miss might be best achieved through strengthening high-quality maternal health care services, designing a health program which attracts women with little or no education, and investing on health promotion, education and advocacy.

CMHSA23: Infant feeding practice and associated factors among HIV positive mothers in Debre Markos Referral hospital East Gojam Zone, North West Ethiopia, December, 2013.

Elias Bekele, Kahasay Zenebe, Tatek Abate

Abstract

Introduction: The dilemma posed between life saving benefit and risk of transmission through breast feeding complicate infant feedings in communities affected by HIV/AIDS. In sub Saharan countries including Ethiopia poor infant feeding practices are wide spread. According to WHO guideline EBF and ERF are the recommended infant feeding practice for HIV positive mothers.

Objective: To assess infant feeding practice and associated factors among HIV positive mothers in Debre Markos Referral Hospital, North west Ethiopia, 2013.

Methods: Institutional based cross sectional study was conducted from May 6 to October 5, 2013. Systematic random sampling technique was used to get the sample size of 260 participants. A pretested structured questionnaire was used to collect data. Data were entered into EPI Info version 3.5.1and exported to SPSS version 16.0 software package for analysis. P value less than 0.05 was considered to decide statistical significance. Bivariate and multivariate analyses were performed to check associations and control confounding.

Results: Of all 260 HIV positive mothers included in the study. Among this 223 (85.8%) of respondents had followed the recommended way of infant feeding practice while significant percentage (14.2%) had practice mixed feeding. In multivariate analysis mothers attending high school and above (AOR = 5.25 95% CI:1.25-22.1), having ANC follow up (AOR = 5.5 95% CI:1.5-20.16) being on ART (AOR = 6.5 95% CI:1.88-22.51) and disclosure of HIV status (AOR = 7.1 95% CI:1.26-39.76) were found to be independently associated factors with infant feeding practice.

Conclusion and recommendation: This study revealed that the great proportion of mothers followed recommended feeding practice and significant number of mothers had practiced mixed feeding. Educating women, increasing ANC utilization, counseling mothers to start ART, encouraging mothers to disclose their HIV status were recommended.

CMHSA24: Prevalence of preterm birth and associated factors among mothers who gave birth at Debre markos town health institutions, East gojjam, Northwest Ethiopia, November, 2013

Tigist Bekele, Mr. Abdella Amano, Mr. Kahsay Zenebe

Abstract

Introduction: A preterm birth results in significant health consequences to the newborn and families and communities in terms of emotional and economic costs. About 75% of perinatal deaths and 50% of neurological abnormalities are directly attributed to preterm. In Ethiopia, high rate of neonatal mortality is reported and preterm birth is believed to be a major cause of neonatal morbidity and mortality.

Objective: The purpose of this study was to assess the prevalence and associated factors of preterm birth in Debre Markos Town health institutions, East Gojjam, Northwest Ethiopia, 2013

Methods: Institutional based cross sectional study was conducted from June to August; 2013. Systematic random sampling technique was used to select a total of 422 study participants. A Structured and pre-tested questionnaire was used to collect data. Data were collected using face to face interview supplemented with chart review. *Data were analyzed using SPSS version 20 software package. Descriptive and summary statistics were done Bivariate and multiple logistic regressions were used to identify factors the presence and strength of association.* Odds ratios with 95% confidence interval were computed to determine the level of significance.

Results: The prevalence of preterm birth was 11.6%.. The presence of chronic illness (AOR= 4.5; 95% CI: 2, 10.2), complication of pregnancy (AOR=2.9; 95% CI: 1.3, 6.7), premature rupture of membran (AOR=6.2; 95% CI: 2.7, 14),low income<600 birr (AOR=2.6 ; 95% CI: 1.1, 6.6),has no antenatal follow up (AOR=0.24; 95% CI: 0.09, 0.6), and being aninec (AOR=7.2;95CI:3.1-16.8) were found to be significantly associated with preerm birth .

Conclussion and recommendation: prevalence of pre term birth was found to be higher in Debre Markos town health institutions. When woman have history of chronic illnes,if there is complication of pregnancy, if there is presence of premature rupture of membran, low income, has and when a woman didn't attend antenatal care ,and being anemic then the woman would give a preterm birth.Interventions should aim at deacreasing preventable causes of preterm birth like administering Prevention-Elemental iron for every pregnant woman.

CMHSA25: Utilization and associated factors of modern contraceptive among HIV positive Reproductive age women attending art clinics, Gondar town, Northwest Ethiopia, May, 2014.

(Bekalu Getnet, Azmeraw Smegn , Mengst Getie , G/mical Aragy , Mulugeta Worku, Filmawit Zeid, Mr.Kahsay Zenebe

Abstract

Background: HIV infected women in sub-Saharan Africa are substantial risk of unintended pregnancy and sexually transmitted infection in developing countries including Ethiopia. Counseling and provision of modern contraceptives choice to HIV infected women including those on antiretroviral Therapy (ART) was an important strategy to prevent unintended pregnancies and sexually transmitted infections. Little is known about the existing practices and utilization of modern contraceptives among HIV positive reproductive age women attending ART units.

Objective: The aim of this study was to assess utilization and associated factors of modern contraceptives among HIV positive reproductive age women attending ART clinic, Gondar town, Northwest Ethiopia, 2014.

Method: Institution based cross-sectional study will be conducted. Sample sizes of 423 women were included by Quota non probability sampling technique. We collected information by interview using structured questionnaires after formal letters was given to the concerning

authority. The collected data was processed and analyzed using SPSS version 20 for windows and the result presented using tables and texts and the test cross check at the level of significance of 95% of confidence interval to see association of variables and p-values of 0.05 to ensure strength of association.

Result: A Total of four hundred twenty three women are participated in the study. Most of the respondents found the age between 21-35 years, which account 72.3% and the least age account 2.6%, which is the age less than 20 years with the mean age of 32 years. More than half, 78.8 % of the respondents were using modern contraceptive, of whom 51.2% were used Injectables. Independent factors such as age ,income, distance and knowing modern contraceptives are positively associated with modern contraceptive uses with [(AOR=0.923,95%CI (0.884,0.963), AOR=1.457, 95%CI(1.085,1.958), AOR=0.747,95% CI(0.588,0.950) and AOR=0.016, 95% CI (0.005,0.056)]

Conclusion: Results of this study showed that most of women knowing of modern contraceptive methods were to be high, but utilization of modern contraception methods was still low. Continuous and targeted information provision on modern contraceptive should be done and ART services should be integrated to sexual and reproductive health services such as family planning services.

CMHSA26: Knowledge and Practie of birth preparedness and complication readines among women who gave birth in the last one year and attending immunization and family planning in Gondar twon Health institutions, Amara Regional state ,north Gondar Zone, North west Ethiopia, May, 2014.

Mastewal Belayneh ,Kahsay G/slassie , Aynetu Tsehay , Abaynew Getahun, Ekram Muzemil, Yadamsra Yizez, Abdella Amano (BSC, MPH) and Tibebe Zena.

Abstract

Background: Maternal mortality is a substantial burden in developing countries, improving maternal mortality has received recognition at global level as evidenced by the inclusion of reducing maternal mortality in the millennium development goal. Birth preparedness and complication readiness is a strategy promotes the timely use of skilled maternal and neonatal care. Lack of advance planning for use of a skilled birth attendant for normal births, and

particularly inadequate preparation for rapid action in the event of obstetric complications, are well documented factors contributing to delay in receiving skilled obstetric care.

Objective: To assess the knowledge and practice of birth preparedness and complication readiness among women who gave birth within the last one year and attending Immunization and family planning in Gondar town health institutions.

Methods: An institutional based cross sectional study was conducted from January 05 to June 15/2006 on 423 women who gave birth within the last one year. Systematic random sampling technique was used to select study participants. The collected data were entered and analyzed by SPSS window version 20.0. The women were asked whether they followed the desired five steps while pregnant: identified a trained birth attendant, identified a health facility, arranged for transport, identified blood donor and saved money for emergency.

Result: This study revealed that about 146(34.5%), 120(28.8%) of the respondents were knowledgeable on danger sign during pregnancy and delivery respectively. Regarding the knowledge of birth preparedness, 75.9% of the respondents were knowledgeable and 73.9% stated that they were prepared for birth and its complication.

Conclusion and recommendation: The study identified relatively poor comprehensive knowledge on danger sign during pregnancy, labor and delivery in the study area. Community education about preparation for birth and its complication and empowerment of women through expansion of educational opportunities are recommended for improving birth preparedness and consequently the effects of pregnancy related complication.

CMHSA27: Assessment of the demand for long acting contraceptive methods and associated factors among currently married reproductive age women attending ART and pre-ART services in Bahir Dar City, Northwest Ethiopia.

Abebaw

Abstract

Introduction: One of the strategies for the prevention of mother-to-child transmission of HIV is prevention of unintended pregnancies among HIV-positive women. Long acting contraceptive methods are the ideal choices for women living with HIV/AIDS. However, studies conducted on

demand for long acting contraceptive methods in this particular group of people is scarce in Ethiopia and unavailable on the study area.

Objective: To assess demand for long acting contraceptive methods and associated factors among currently married reproductive age women attending ART and pre-ART services in Bahir Dar City, Northwest Ethiopia.

Methods: An institution-based cross-sectional study was conducted among 654 systematically selected reproductive age women attending ART and pre-ART services in Bahir Dar city from March to April, 2014. A structured and pretested interviewer administered questionnaire was used to collect data. EPI info version 3.5.3 for data entry and SPSS version 16 for analysis was used. Both bivariate and multivariate analyses were employed. In multivariate analysis p-value less than 0.05 was used as a statistical significant and odds ratio with 95% CI was used to assess the degree of association.

Results: About 654 respondents were participated in the study with 99.4 response rate. The mean age of the study participants was 31.67 and SD ± 5.46 . About 642 (98.2%) respondents had ever heard at least one long acting contraceptive methods (LACMs) and one source. About 186 (28.4%) respondents were using LACMs. The demand for long acting contraceptive methods was about 36.7%, 95% CI (33.2, 40.6). Being urban resident, elementary educational level, having four or more alive children, having past experience to LACMs, want to give birth after two year, and want no more child had positive association while myths heard about LACMs and having information on the availability of PMTCT services had negative association with the demand for LACMs.

Conclusion and recommendations: Even though the demand for LACMs in this study was higher than the studies done in the general population, it was not found as expected in HIV positive individuals. Myths about LACMs were common in the community and are the major barriers for the promotion and utilization of the methods. So it is important to do a lot on demand creation and provision of information, education and communication is required to create bring attitudinal change related to myths.

Key words: *LACMs, Demand for LACMs, PMTCT, ART and pre-ART users, Myths.*

CMHSA28: Drug-Resistant Tuberculosis: Knowledge, Attitude and Practices of Health Professionals in University of Gondar and Felege Hiwot Referral Hospitals
Kefyalew Addis, Dr.Sisay Yifiru, Digsu Negese, Akilew Awoke, Bikes Destaw, Dr.Aynishet Adane

Abstract

Introduction: The emergency of Multi Drug Resistance Tuberculosis (MDR-TB) has become a major public health problem in a number of countries and an obstacle to the global TB control efforts. Ethiopia is one of the 27 high burden MDR-TB countries ranking 15th with more than 5000 estimated MDR-TB cases per year. Health professionals have key roles in the prevention and control of MDR-TB. However, there is no evidence which shows the knowledge, attitude and practice of health professionals towards MDR-TB in our countries.

Objective: To assess the knowledge, attitude, and practices of health professionals about multidrug resistance tuberculosis at Amhara region referral hospitals

Methods: Institution based cross sectional study was conducted. Data was collected by using self-administered structured questionnaire. Frequencies and cross tabulations were used to summarize the descriptive statistics of the data. Both bivariate and multivariate logistic regression model were used to identify the variables which have association with the dependent variable. The variables which have significant association were identified on the basis of OR, with 95%CI.

Result: A total of 377 health professionals were included in the study. More than two third (68.4 %) of the study participants were from University of Gondar Referral Hospital and the rest one third (31.6%) were from Felege Hiwot Referral Hospital. Majority of them were nurses 198(52.5%) and medical doctors 59(15.6%). The mean knowledge score was 7 with 1.7 sd. Educational status, ever diagnosed for TB, training for infection prevention and type of hospitals were significantly associated with Knowledge of health professionals on MDR-TB. Health professionals have also poor practice towards the prevention of MDR-TB.

Conclusion and recommendation: Health professionals have poor knowledge, attitude and practice towards the newly emerged health problems. Therefore, it is better to work on the three

dimension of learning to control the devastating effect of MDR-TB. It is important to give training on infection prevention and educational opportunity for all health professionals especially for those who are working at university of Gondar Referral hospital.

***CMHSA29: ASSESMENT OF CLINICAL CHEMISTRY AND HEMATOLOGIC
PARAMETRES ON HIV/AIDS PATIENTS WHO HAVE BEEN UNDER HAART IN
GONDAR UNIVERSITY HOSPITAL.***

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Abstract

Introduction: Human immuno deficiency virus is the causative agent of acquired immuno deficiency syndrome in which its coverage was 34 million peoples globally by the year 2010. Since HIV/AIDS is the most serious chronic disease, it requires continuous follow up in the treatment of disease therefore our study had been conducted in Patients who have been taking HAART in Gondar University Hospital to asses clinical chemistry and hematology parameters before and after the patient begins taking HAART.

Objectives: General objective of the study is to asses hematologic and clinical chemistry parameters on Patients who have been taking HAART before and after they start HAART, the specific objectives are assessment of CBC (complete blood count), liver enzymes and renal function parameters of Patients who have been taking HAART in GUH before and after they start HAART.

Method; A cross sectional retrospective study was conducted in Gondar town specifically in Gondar University Hospital ART clinic and assesses clinical chemistry and hematology parameters during HAART. The study has been conducted from February 23-April 27/2012. And it costs 3401.50 birr.

Result; There is strong significant change in the values of Renal function parameters (Creatinine and Urea), and most Hematological parameters (hemoglobin, hematocrit, lymphocyte, neutrophil and platelet) with ($p < 0.05$). However there is no significant change in Liver parameters (alanine amino transferase and alkaline phosphatase) and white blood cells and mixed white blood cells (monocyte, basophile and eosinophile) with ($p > 0.05$) after they start taking HAART.

Conclusion; Administering ART drugs for HIV/AIDS show great improvement in most Hematologic parameters and Renal function parameters while there is no significant improvement in the level of Liver enzymes and in WBC and mixed WBC.

Key Words: HIV/AIDS, HAART, Liver Function, renal function, CBC

***CMHSA30: Prevalence and Associated Factors of Overweight and Obesity among
Adult Gondar Town Residents, North West Ethiopia
Derese Mekonnen, Yigzaw Kebede, Solomon Mekonnen***

Abstract

Background: During the last few decades obesity has been growing at an alarming rate in both the developed and the developing countries at all age level.

Objectives: The main purpose of this study is to determine the prevalence of overweight or obesity and abdominal obesity and to explore associated factors among adults 18 years and older in Gondar town, North West Ethiopia.

Materials and Methods: Community based cross-sectional study conducted from March 18 up to March 27, 2014 in Gondar town. Data gathered using structured questionnaire using multistage sampling method. Anthropometric measurements such as height, weight and waist circumferences measured from study participant using international standard of anthropometric assessment guideline. The prevalence of overweight or obesity and abdominal obesity were assessed using WHO cut off points. Binary and multivariate logistic regression models were fitted to see the association between the response and predictor variables and p-value less than 0.05 used as cut point for statically significance.

Result: The prevalence of overweight and obesity in the study population was 17.56% [95%CI: 15.56, 19.96]. There was significant difference in the prevalence between women and men. In men 12.69% [95%CI: 9.36, 16.02] and in women 20.79% [95%CI: 17.49, 24.09]. The prevalence of abdominal obesity in the study population was 36.36% [95%CI: 33.33, 39.40]. The prevalence of abdominal obesity was 8.55% [95%CI: 5.75, 11.35] in men and 54.81% [95%CI: 50.76, 58.86] in women. There was significant statistical difference in the prevalence between the two sexes. Being female, age 25 to 44 years, having 1 or more children, high wealth index, eating watching television were significantly associated with overweight or obesity. For abdominal

obesity being female age 24 and above, high wealth index were positively associated variables. Walking 3 or more days per week were protective for abdominal obesity.

Conclusion: The prevalence of general obesity among Gondar town residents was high as compared to Ethiopian Demographic and Health Survey reports although it is lower than some studies conducted nationally and in sub-Saharan countries. The proportion of abdominal obesity in the town is also large despite it is lower than other African countries. Prevention strategies should be formulated to increase physical activity level of the community.

CMHSA31: Risky Sexual Behaviors among University of Gondar Students, Northwest Ethiopia

Bantyriga Mitiku, Derejaw Abuhay, Mequanint Ayalew, Mulat Asmare, Tigist Enyew, Eshetu Haileselassie Engeda

Abstract

INTRODUCTION: Studies in Africa and elsewhere indicate that students of higher institutions are exposed to many risky behaviors including substance use, sexual coercion and unsafe sex which predispose them to STIs including HIV/AIDS, unwanted pregnancy and abortion. However, little has been explored about the magnitude of risky behaviors and associated factors in the context of higher education institutions in Ethiopia.

OBJECTIVE: aim of this study was to assess the pattern of risky sexual behaviors and associated factors among university of Gondar students

METHODS: This cross sectional study was conducted from February 7-may 30, 2014 involved quantitative method. The research was conducted on 656 students selected by multistage random sampling technique. The data were collected using self administered questionnaire and analyzed using SPSS V.20.

RESULT: Among the respondents, 209(33.2%) ever had sexual intercourse. The mean age at first sexual intercourse was 18.5 ± 1.92 years. Among whoever had sex, 71.7% had sex in the last 12 months and 33% had multiple sexual partners. Out of the students sexually active during last 12 months about 79% had sex with a non-regular partner. Inconsistent condom use among ever had sexual intercourse was 40.3%. Curiosity, peer pressure, substance use campus and outside environment were identified as predisposing factors

CONCLUSION: Risky sexual behavior such as having multiple sexual partner and sexual practice without condom with non-regular partner exists. The university and concerned health bodies should work together to address the identified risky behaviors with particular focus on Behavioral change communication.

KEYWORDS: Risky behavior, university of Gondar, university students

CMHSA32: Do Elementary School Children Plant and Eat Their Vegetables?: A Preliminary Evaluation of KDP's Seed Distribution and Education Program

AUTHORS: Michael Austin, Capital University; Andrew J. Carlson, Capital University; Amsalu Feleke, University of Gondar

Abstract

BACKGROUND: Since 2006 the Kossoye Development Program has distributed vegetable seeds packets to elementary school students. The assumption has been that schools and children are particularly effective agents of change. In addition, schools provide a central location for outreach and can maximize distribution efforts by giving seeds to children from a much broader area than KDP staff and volunteers could cover independently. In the past year KDP distributed seeds to nearly 10,000 students from the 4th to 8th grades. In 2015 it plans to distribute seeds to at least 20,000 students. However, there have been some questions raised about the effectiveness of distributing seeds to children. This year, as part of its continuing nutrition study, KDP implemented a program evaluation to assess this seed distribution and education strategy.

OBJECTIVE: To determine if students actually use the seeds to plant gardens and whether this makes a difference in their height and weight.

METHODS AND RESULTS: This is a qualitative study using height and weight measurements with SECA digital scale and stadiumoterfor 1000 fourth and fifth grade students in four rural and one urban elementary school. This paper looks at the first round of data collection, taken immediately after the six week education program, to understand the past effectiveness of KDP distribution strategies and have a baseline for further observation.

CONCLUSION AND RECOMMENDATION: Preliminary observations indicate that 50% of students plant the vegetable seeds and most of these eat some of the vegetables they grow. The larger question is whether this is an acceptable level of seed usage.

CMHSA33: A Follow Up to The Kossoye Nutrition Study: Do Gardens Make a Difference in Children's Height and Weight?

AUTHORS: Michael Austin, Capital University; Andrew J. Carlson, Capital University; Amsalu Feleke, University of Gondar; Nikki Rogers, Wright State University

Abstract

BACKGROUND: In June 2012 at the 22nd Annual Conference on Research and Service Rogers *et. al.* made a preliminary report on the Kossoye nutrition study of 2008-2012. The key finding was that while there were no significant differences in height and weight in boys who did and did not garden, girls who gardened was significantly taller than those who did not.

OBJECTIVE: This is a follow up study to explore problems and questions unresolved in the first analysis.

METHODS AND RESULTS: This study follows up with a focus on the same question—does gardening and eating vegetables make a demonstrable difference in height and weight among males and females—with a research design revised in order to tease out confounding variables. The 2008-2012 study took a longitudinal approach which analyzed changes in height/weight of individual children over two years. This study uses a comparative analysis of 1000 children in the 4th and 5th grade in five elementary schools with significantly different social profiles. The study investigates children's height, weight, and survey question responses twice a year over two years in order to understand seasonal trends in malnourishment as well as gardening and eating habits.

CONCLUSION: Children who are closer to international growth standards are in fact more likely to eat vegetables from their household gardens, but the reason for these differences is a more difficult to explain and nuanced combination of education, social and family structure, and economic resources.

RECOMMENDATION: This study needs to be followed up and explored more with further analysis and continued evaluation of population study groups.

CMHSA34: Prevalence of malnutrition and associated risk factors among adult visceral leishmaniasis patients in Northwest Ethiopia: a cross sectional study
Bewketu Mengesha, Mengistu Endris, Yegnasew Takele, Kalehiwot Mekonnen, Takele Tadesse, Amsalu Feleke and Ermias Diro

Abstract

BACKGROUND: Visceral leishmaniasis (VL) causes considerable morbidity and mortality in Ethiopia. Data on the prevalence and associated risk factors on malnutrition among VL patients in Ethiopia are scarce. This study aimed to assess the prevalence of malnutrition and its associated risk factor among VL patients in Northwest Ethiopia.

METHODS: An institution-based cross-sectional study was conducted from June to September 2012 at four leishmaniasis treatment sites in Northwest Ethiopia. Four hundred and three adult VL patients were enrolled in the study. Malnutrition was defined as a body mass index (BMI) ≤ 18.5 kg/m². The data collected from the VL patients included sex, age, residence, occupation, weight, height, laboratory results (HIV, hemoglobin, intestinal parasites). Multivariate logistic regression model was used to determine the strength of association between malnutrition and associated risk factors.

RESULTS: Among 403 adult VL patients 385 (95.5%) were malnourished. Twenty eight percent (n = 113), 30.3% (n = 122), and 37.2% (n = 150) were mildly, moderately and severely malnourished, respectively. The prevalence of intestinal parasitic infection was 47.6% (n = 192) and it was associated with malnutrition (P = 0.01). The prevalence of VL-HIV co-infection was 10.4% (n = 42). Hook worm, *Giardia intestinalis* and *Ascaris lumbricoides* were the leading prevalent intestinal parasites. Factors such as age, sex, residence, occupation, HIV status and anemia were not associated with severe malnutrition.

CONCLUSIONS: The prevalence of malnutrition in VL patients was very high and it was associated with intestinal parasitic infections. Therefore, screening of severely malnourished VL patients for intestinal parasitic infections during admission is recommended.

Keywords: Anemia, HIV, Intestinal parasites, Malnutrition, Visceral leishmaniasis

CMHSA35: Prevalence of vancomycin resistant Enterococci and associated risk factors among clients with and without HIV in Northwest Ethiopia: a cross-sectional study.

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Abstract

Background: Enterococci are the most important multidrug resistant organisms associated with immunocompromised patients. Data are lacking about the epidemiology of vancomycin resistant Enterococci (VRE) in Ethiopia. This study aimed to assess the prevalence of VRE, their susceptibility patterns to different antibiotics and associated risk factors in fecal samples of Human Immunodeficiency Virus (HIV) positive and HIV negative clients.

Methods: A cross sectional study was carried out in a total of 226 (113 HIV positive and 113 HIV negative) clients, from July 1/2013 to September 30/2013 at the University of Gondar Teaching Hospital. Data on socio-demographic characteristics and risk factors were collected with a short interview guided by pre-tested structured questionnaire. The enterococci were isolated and identified from stool sample using standard bacteriological procedures. Kary Bauer disk diffusion method was used to determine the susceptibility patterns of Enterococci isolates. Data were entered and analyzed using SPSS version 20 statistical package.

Results: The overall colonization of Enterococci was 88.9% (201/226) of which 11 (5.5%) were VRE. The prevalence of VRE among clients with and without HIV infections were 8(7.8%) and 3(3.1%), respectively. Ninety percent of the Enterococci isolates (181/201) were resistant to two or more antibiotics tested. Isolates of Enterococci recovered from stool samples of HIV infected patients were more resistant to amoxicillin and amoxicillin-calvulinic acid than HIV negative clients ($P < 0.05$). Antibiotic treatment for the last 2 weeks was found to be the risk factor that showed statistically significant association with the presence of high VRE colonization. However, the socio-demographic variables and factors such as malnutrition, leucopenia, thrombocytopenia, anaemia, duration of Highly Active Antiretroviral Therapy, CD4 cell count, stage of WHO and drinking alcohol were not associated with VRE ($P > 0.05$).

Conclusion: The high prevalence of VRE in this study signals the emergence of VRE in the study area. Prior antibiotic treatment was associated with VRE colonization. Therefore, rational use of antibiotics and more detailed study using phenotypic and genotypic methods are needed.

Keywords: Vancomycin-resistant, Enterococci, HIV

CMHSA36: Assessment of Microbiological and physico-chemical quality of drinking water in North Gondar Zone, Northwest Ethiopia

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Abstract

Introduction: Assessing the microbiological and physico-chemical quality of drinking water sources is important to prevent diarrheal diseases. Little is known about the microbiological and physico-chemical quality of drinking water of North Gondar Zone.

Objective: This study was aimed to assess the microbiological and physico-chemical quality of drinking water sources in North Gondar Zone, Northwest Ethiopia.

Methods: A cross-sectional study was conducted from April-May 2014 in potable water in 7 districts (Chilga, Debark, Dabat, Dembia, Gondar Town, Gondar Zuria and Wogera) in North Gondar. The microbiological and physico-chemical quality of 71 drinking water samples were determined following the standard procedure. Questionnaire was also used to collect data of the water source. The PH, turbidity, temperature, coliforms, vibrio parahemolyticus, arsenic, chlorine, Cr₆₊, NO₂ and NO₃ and residual chlorine were determined by the colorimetric methods and rapid kits using DPM apparatus (Kyoritsu chemical-check Lab., Corp. Japan). Data will be entered and analyzed using SPSS version 20 software.

Results: The water samples taken from tap, spring and well was 29(40.9%), 15 (21.1%) and 27(38%), respectively. About 38,724 people use this water sources. Turbidity was found to be unacceptably high in 21(29.6%) samples. All samples were complying with the WHO acceptable range for Nitrate and Arsenic among the chemical parameters measured. Unlike this residual chlorine was found to be low in most of the samples (n=69; 97.2%). Majority of the samples (n=46; 64.8%) had coliforms and 12(16.9%) had vibrio parahemolyticus. Samples collected from

rural areas, owned by public and being established recently (<10 years) have shown the highest probability of contamination ($P<0.05$).

Conclusion and recommendation: Most of the physical and chemical parameters measured were within the recommended range. However, majority of the drinking water samples were found to be contaminated. Therefore, regular quality monitoring and frequent water treatment is mandatory.

Key words: quality, drinking water, microbiological, physicochemical

CMHSA37: Adherence and associated factors towards anti-diabetic medication among type II diabetic patients in University of Gondar Hospital, Diabetic Clinic, Gondar, Northwest Ethiopia

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Abstract

Introduction: The prevalence of diabetes mellitus (DM) is on the rise worldwide and this is more so in the developing countries which unfortunately are already overburdened by a high disease burden arising from communicable diseases. Non-adherence to medication is potentially one of the most serious problems facing diabetes care delivery, particularly in type 2 diabetes. Adherence to prescribed medications is a key dimension of healthcare quality.

Objectives: the purpose of this study was to assess adherence and associated factors towards anti-diabetic medication among type II diabetic patients in University of Gondar Hospital, Diabetic Clinic, Gondar, Northwest Ethiopia.

Methods: Institutional based cross-sectional study was conducted from March 1 to June 30. Systematic sampling technique was used to select 288 participants. Data were collected through structured interview. Morisky Medication Adherence Scale (MMAS) scores were used for labeling patients as adherent or non-adherent. Data were entered and analyzed using SPSS version 20. To see the association of variables logistic regression with OR and 95% CI was done.

Results: A total of 288 study participants were interviewed with response rate of 100%. The level of adherence was found to be 85.1%. Factors found to be significantly associated with anti-

diabetic medication adherence were level of education (AOR=14.27, 95% CI= 3.0, 67.82), duration of diabetes (AOR= 6.10, 95%CI =2.03, 18.34) and knowledge about DM and its medications (AOR=28.05, 95% CI=8.96, 87.8).

Conclusions and recommendations: More than three forth of the respondents in this study were found to be adherent to their anti-diabetic medications. The adherence to anti diabetic medications was high. Level of education, duration of diabetes and knowledge about DM and its medication were significantly associated with anti-diabetic medication adherence of patients. Health education including adherence counseling to create awareness towards DM and its medications is mandatory.

Key words: Diabetes mellitus, Adherence, Morisky Medication Adherence Scale (MMAS)

***CMHSA38: Treatment outcome of tuberculosis patients at Enfraz Health center,
Northwest Ethiopia: a five year retrospective study***

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Chandrashkar Unakal***

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Abstract

Background: Tuberculosis (TB) is a major global health problem. Monitoring the outcome of TB treatment is essential in order to evaluate the effectiveness of the DOTS program. The aim of this study was to assess treatment outcome and associated risk factors among TB patients registered for anti-TB treatment at Enfraz health center, Northwest Ethiopia. **Methods:** A five year retrospective data (2007-2011) of tuberculosis patients (n=417) registered for anti-TB treatment at Enfraz health center, Northwest Ethiopia were reviewed. Tuberculosis outcomes were following the WHO guidelines. Data were entered and analyzed using SPSS version 20. Logistic regression model was analyzed to determine the association between the TB treatment outcomes and independent predictors.

Results: Among 417 study participants, 95(22.8%), 141(33.8%) and 181(43.4%) were smear positive, smear negative and extra pulmonary tuberculosis patients, respectively. Of the 417 study participants 206 (49.4%) were tested for HIV. The TB-HIV co- infection was 24/206 (11.7%). Seventeen study participants (4.2%) were transferred to other health facilities. Among the 400 study participants 379(94.8%) had successful treatment outcome (302 treatment completed and 77 cured). The overall death, default and failure rates were 3.4%, 0.5% and 1.2%,

respectively. There was no significant association between sex, age, residence, type of TB, HIV status and successful TB treatment outcome. Considerable treatment success rate was observed in the first three years of the study (2007-2009), from 88.7% to 100%.

Conclusion: Treatment outcome of patients attended their anti-TB treatment at Enfraz health center was successful. Therefore, this treatment success rate should be maintained and strengthened to achieve the millennium development goal.

Key words: DOTS, tuberculosis, treatment outcome, success rate

CMHSA39: Treatment outcomes of tuberculosis patients in Debre Markos referral hospital, North West Ethiopia (June 2008-August 2013): a five year retrospective study
Ahmed Esmael¹, Girma Tsegaye¹, Moges Wubie¹, Habtamu Abera¹ and Mengistu Endris²

¹Debre Markos University, ²University of Gondar, Ethiopia

Abstract

Background: Tuberculosis is the second most common cause of death due to an infectious disease after human immunodeficiency virus. According to World Health Organization 2010 report, 9.4 million incidents and 14 million prevalent cases were occurred. Ethiopia has been one of the 22 high TB burden countries with an incidence and prevalence rate of 300 and 470 cases per 100,000 populations respectively. To evaluate the effectiveness of tuberculosis control program, continuous monitoring of the outcome of tuberculosis treatment and analyze the specific reasons for unsuccessful treatment outcome are important. Objective: To assess the treatment outcomes and possible associated factors on patients who registered on DOTS clinic of Debre Markos hospital, North West Ethiopia, from June 2008-August 2013. **Methods:** A retrospective study was conducted among 717 TB patients who are registered at DOTs clinic of Debre Markos referral hospital. Socio-demographic and clinical data of the study participants were collected from the TB log from the DOTS clinic. Data were entered and analyzed using SPSS version 16 software.

Result: out of 717(371 men and 346 females) aged 18 and above, 425 (59.3%) had successful and (9.4%) 67 had unsuccessful treatment outcome. In the final multivariate logistic model, the odds of unsuccessful treatment outcome was higher among patients being age older than 51 years, rural residence, pulmonary negative, positive for HIV status and being in the year 2008 as

compared to their respective comparison groups. Conclusion: Treatment outcome among TB patients in Debre Markos hospital was unsatisfactory. Those patients at high risk of an unfavourable treatment outcome should be identified early and given additional follow up.

CMHSA40: Proportion of mothers who have at least one circumcised daughters and factors associated with their daughters' circumcision status in Hababo Guduru district, Western Ethiopia.

Abstract

Introduction: Globally proportion of mothers with at least one circumcised daughters were ranges from 3% in Niger up to 73% in Mali. Ethiopia is the second country in Africa in number of girls and women circumcised. About 38% and 34% of mothers have at least one circumcised daughter at national and regional level respectively. To combat this problem, further investigation needs to be done on the current practice taking mothers as study participants since they are expected to play significant role on their daughters' circumcision.

Objective: To investigate proportion of mothers having one or more circumcised daughters and factors associated with their daughter's circumcision status.

Methods: Community based cross-sectional study complemented by qualitative ethnographic study design was conducted from February to June 2014 in Hababo Guduru district. The study was employed on 622 women who had at least one under 15 daughters but due to 12(2%) non response rate only 610 (98%) study participants including 11 key informants for qualitative were used for analysis. structured interviewer administered questionnaire was used to collect socio-demographic characteristics, attitude, knowledge and practice of women whereas guideline interview was used for qualitative part to collect information which is related to culture. Both bivariate and multivariable binary logistic regression was carried out to identify factors associated daughters' circumcision status. Descriptive (mean, frequency and proportion) and inferential statistics (95% CI, COR, AOR) was presented by using tables and graphs. AOR with 95% CI were used to measure strength of association and $p \leq 0.05$ was used as a cut of point for level of significance.

Result: Out of total of 610 study participants, 48% of them had at least one under 15 circumcised daughters. Mothers' knowledge, attitude, residence, educational status, knowing FGC as criminal and number of daughters per women were significantly associated with anti-

diabetic medication adherence were level of education (AOR=14.27, 95% CI= 3.0, 67.82), duration of diabetes (AOR= 6.10, 95%CI =2.03, 18.34) and knowledge about DM and its medications (AOR=28.05, 95% CI=8.96, 87.8).

Conclusions and recommendations: More than three forth of the respondents in this study were found to be adherent to their anti-diabetic medications. The adherence to anti diabetic medications was high. Level of education, duration of diabetes and knowledge about DM and its medication were significantly associated with anti-diabetic medication adherence of patients. Health education including adherence counseling to create awareness towards DM and its medications is mandatory.

Key words: Diabetes mellitus, Adherence, Morisky Medication Adherence Scale (MMAS)

CMHSA41: Knowledge and Attitude Married Males towards Vasectomy and Associated Factors, In Gondar North West Ethiopia
Headija yenus, Gizachew assefa, Azeb atnafu

Abstract

Background: Male sterilization through vasectomy is far less expensive, effective, less invasive and safer than female sterilization through tubal ligation

Objectives: to assess KAP of married males towards vasectomy and associated factors on knowledge and attitude of vasectomy, in Gondar North West Ethiopia.

Methodology: Community based cross-sectional quantitative study was conducted. Data was collected by a detailed standardized pre-coded questionnaire and analyzed using SPSS version 16. Frequencies and percentages of different variables were determined and odds ratios were calculated. Logistic regression was used to control confounders.

Result: There were 766 married males participated in the study. The mean age of the study participants was 40.5 years with standard deviation of 9.66. Majority of the respondents 86.7% and 84.1% didn't have knowledge and positive attitude respectively. No one was used vasectomy as a family planning method. Educational status of the husband had 0.16 and 0.27 times less likely to have association towards knowledge on vasectomy {primary education {AOR= 0.016(0.06, 0.45)}, and secondary education, {AOR=0.27(0.13, 0.54)}, respectively. Those who had positive attitude 0.25 times less likely associated to knowledge towards vasectomy with {AOR=0.25(0.14, 0.42).

Number of children and economic status of the respondents had strongly associated to knowledge towards vasectomy {Number of children (1-2), 2.4 times more likely associated to have knowledge towards vasectomy than didn't have a child and those who have more than 2 children. Economic status of the respondents, those who had medium income 2.9 times more likely associated to have knowledge towards vasectomy, {{AOR=2.94(1.13, 7.52)

Educational status of the husband, 0.11 and 0.35 times less likely associated to have positive attitude on vasectomy { primary education {AOR= 0.11(0.04, 0.37)}, secondary education, {AOR=0.35(0.16, 0.79)}} respectively. Occupational status of the husband 0.38 times less likely to have positive attitude towards vasectomy {daily laborer {AOR=0.38(0.16, 0.96)}}. Those who had Knowledge 0.27 times likely to have positive attitude towards vasectomy {AOR=0.27(0.16, 0.47)}. Number of children, 1-2, 3 to 4 and 5 and above had 3 to 5 times more likely to have positive attitude towards vasectomy {{AOR= 3.08(1.09, 8.71)}, {AOR=5.29(2.28, 12.31)}, and {AOR=3.41(1.41, 8.24)}} respectively. Economic status of the respondents, those who had medium and poor income 2.5 times more likely to have positive attitude towards vasectomy. {{AOR=2.58(1.11, 6.00), and {AOR=2.20(1.00, 4.94)}} than rich.

Conclusion: In this study Males were decision maker on family planning. Despite this majority of the respondents had poor knowledge, negative attitude and no one used vasectomy as family planning. Educational status of the husband and attitude were less likely associated to knowledge and monthly income and numbers of live children were strongly associated to knowledge on vasectomy. Multivariate logistic regression analysis on attitude towards vasectomy shows that educational and occupational status of the husband and knowledge less likely associated to attitude on vasectomy where as number of children, and family income were strongly associated to attitude towards vasectomy. some of the reasons for negative attitude to accept vasectomy were Lack of information, My partner is using another family planning method, Service is not available, Need more children, It imposes a negative impact on sexual act, Not allowed religiously, Refusal of the spouse, Influence of family members and friends and Other (my partner is menopause, widowed, divorced).

Keywords: Knowledge, Attitude, Men, Vasectomy, factors.

CMHSA42: Prevalence and associated factors of hypertension among ministries civil servant in Addis Ababa, Ethiopia, 2014

Kassawmar Angaw, Kefeyalew Addis, Abel Fekadu

Abstract

Introduction: Hypertension, also known as high or raised blood pressure, is a global public health issue. It contributes to the burden of heart disease, stroke and kidney failure and premature mortality and disability. One in three adults worldwide has risen of blood pressure that causes around half of all deaths from stroke and heart disease. Prevalence of hypertension in paid workers in Nigeria was 27.1%. The trend of hypertension is increase in Ethiopia from 3.6 in 1983, 11.8 in 2002 to 29.6 in 2006 in both sexes.

Objectives: The aim of this study is to assess prevalence and associated factors of hypertension among ministries civil servant in Addis Ababa, Ethiopia, 2014

Methods Institutional based cross sectional study was conducted from February to April 2014 in Addis Ababa. The study was including 655 ministries civil servants who were selected by simple random sampling techniques. Data were collected by using WHO STEP tool adapted to the local setup. Semi structured questionnaire consisting of characteristics related to socio demographic profiles and risk factors for hypertension was used for data collection and there was physical measurements of weight, height and blood pressure. Data were entered into EPI-Info and transferred to SPSS for further analysis. Bi variable and multivariable logistic regression was fitted to identify factors associated with hypertension. Significance was obtained at crude and adjusted odds ratio with 95% CI and $p < 0.05$.

Result: - a total of 655 respondents with 96% response rate were included in the study. The overall prevalence of hypertension among Addis Ababa civil servant was 27.3 % (95%CI 23.3-31). Factors associated with hypertension were: age (48 and above years [AOR=5.88, 95%CI: 2.36-14.67], 38-47 years [AOR=2.80, 95%CI: 1.18-6.60] and 28-37 years [AOR=2.35, 95%CI: 1.00-5.56]), ever cigarette smoking [AOR =2.34(1.31-4.17)], family history of hypertension [AOR=3.26, 95%CI 1.96-54.60], self-reported DM AOR=13.56, 95%CI: 6.91-26.6], BMI [AOR=7.36, 95%CI: 2.36-14.67].

Conclusion and recommendation: - The prevalence of hypertension was high in this study area. Institution based hypertension screening program is needed especially among older age group, ever cigarette smoking obese, has family history of hypertension and self-reported DM.

Keywords: Hypertension, cross sectional study, ministries civil servants, Ethiopia

CMHSA43: Prevalence and risk factors of multidrug resistant and carbapenemase producing Enterobacteriaceae among patients with urinary tract infection at Gondar University Hospital

Setegn Eshetie*, Chandrasekhar Unakal, Feleke Moges, Aschalew Gelaw

Abstract

Background: Nowadays, increased burden of multidrug resistant Enterobacteriaceae causing UTI compounded by harboring carbapenemase producing strains such as *E.coli* and *K. pneumoniae* becomes a serious threat to public health. Carbapenemase producing Enterobacteriaceae expresses enzymes that can break down the antibiotic carbapenem, which is the last resort, antibiotic to treat MDR strains. There are growing evidences of increasing prevalence of MDRE in different part of the world; however, data about the incidence of CPE in is not documented and this is presumed to be first of its kind in Ethiopia. **Objective:** The aim of the study was to assess the prevalence, risk factors of MDR and CPE among patients with symptomatic UTIs.

Methods: A cross sectional study was conducted at the University of Gondar Hospital from February 2014 to May 2014. A systematic random sampling technique was carried out to enroll 442 patients with symptomatic UTIs. All participants were requested to provide a mid-stream urine sample for culture and data for socio-demographic and clinical information were obtained with interviewer administered structured questionnaire. Culturing, biochemical and disk diffusion methods were employed to characterize and antimicrobial susceptibility testing of bacterial isolates. In this particular study, CPE isolates were detected by phenotypic method (CHROMagarTM KPC medium).

Results: A total of 442 patients were enrolled and 183 (41.4%) patients had culture confirmed UTIs. The majority of participants were females (63.8%) and had mean age of 37.05 years; including 86 patients aged <16 years and 73 patients aged >60 years. A total of 183 Enterobacteriaceae isolates were identified, among the isolates 160 (87.4%) were MDRE, the

principal MDR isolate were *E.coli* followed by *K. pneumoniae* and antibiotic resistances among MDRE were significantly greater than non-MDRE. Moreover, 5 (2.73%) of isolates were found to be carbapenemase producers, namely *E.coli* (2/5), *K. pneumoniae* (2/5), and *E. aerogenes* (1/5). Significant drug resistances were also observed among CPE compared to other MDRE isolates. Independent risk factors for MDRE UTIs were sex (female) (OR 4.46; P = 0.018), age (OR 1.08; P = 0.001), hospitalization in the past 12 months (OR 5.23; P = 0.006), prior antibiotic use (OR 3.98; P = 0.04).

Conclusion: Increased prevalence of MDRE and probably for the first time the incidence of CPE was indicated in this study. Attributing risk factors for MDRE were found to be sex, age, hospitalization, and history of antibiotic therapy. Therefore, efforts should be directed to reduce patient hospital stay and improper use of drugs. Additional and vigorous investigation especially on CPE should be encouraged.

Key words: Carbapenemase, Enterobacteriaceae, Multidrug resistant, Urinary tract infection

3. College of Business and Economics, 2013/14

***CBEA1: Econometric analysis of Households vulnerability to food insecurity in
Amhara region: Comparative analysis of Rural and Urban Households
Mesfin Welderufael*, Yibeltal Walle, Ousman Yibre, Wondu Abebe***

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Abstract

Understanding the causes and level of food security would help policy makers to design and implement more effective policies and programs for the poor and thereby helps to pave way to improve food security. This study tried to examine the extent of household's vulnerability to food insecurity in urban and rural areas of Amhara region, using Household Income Consumption & Expenditure (HICE) and Welfare Monitoring (WM) Surveys of 2011. Analytical tools used include descriptive statistics, Foster-Greer-Thorbecke (FGT) and Logit model. The findings revealed that about 48% households were vulnerable to food insecure in Amhara region in 2011, with much higher for rural households. This implies that they were not able to meet the daily recommended caloric requirement which is 2200 kcal per day per AE. A binary logistic model is used to determine the factors, which influence households' food insecurity status for both rural and urban households. The results obtained from the analysis indicate those households with large family sizes; lower consumption expenditure, old age households, unemployed and male heads were more food insecure in urban areas. Household's consumption, transfer income and household head's education levels were negatively impacting household food insecurity. On the other hand, household heads' age and family size were positively associated with household food insecurity. Besides livestock ownerships, farm inputs and farm size, shocks such as drought and illness were the determinants of rural household food insecurity. This finding strongly supports that input access by the poor, promotion of family planning; enhancing livestock packages creation of off farm opportunities, delivery of food aid for emergency needy groups, can mitigate food insecurity in the study area. Additionally, Household food security can be improved in the region by focusing on education, creation of income generating opportunities which will raise consumption and family planning programs. The findings also imply that policies should promote diversification of livelihoods and equal opportunities and rights to access resources, particularly in rural areas.

***CBEA2: The Role of Soil Conservation on Net Value of Crop Income of Farmers:
Evidence from Low Rainfall Areas of West Belessa Woreda, North Gondar Zone
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Abstract

Agriculture is the back bone of the Ethiopian economy and one on which the livelihoods of the poor are highly dependent. This sector contributes nearly half to GDP and share 80 percent to the export earnings. Despite this fact, low productivity characterizes Ethiopian agriculture. Among many factors land degradation is considered as major impediments to agricultural productivity. In recognition of this problem, there has been a great deal of effort to address land degradation problems in Ethiopia. Hence, in order to mitigate the problem government outlines the need to promote soil conservation measures. The study was conducted to measure the impact of soil conservation on net value of crop income for conserved plots, to evaluate crop income difference from that of non-conserved plots and to evaluate the real significance of adopting soil conservation activities on farm plots. For this purpose, the study selected two kebeles by using purposive and stratified random sampling techniques. Hence, cross sectional data on socio-economic level variables to plot specific characteristics including soil conservation status was generated from 176 conserved and 176 non-conserved plots in terms of questionnaire survey and secondary data. The study used descriptive statistics (frequency, percentages, mean, standard deviation, and mean difference), inferential statistics (chi-square and independent sample t-test) and propensity score matching method to control for self-selection and program selection bias. The research finding suggests the existence of a significant positive impact of soil conservation on net value of crop income in West Belessa woreda. From the study, soil conservation measures increased net value of crop income by about ETB 164 for stratification and ETB 299 for kernel matching methods on average to conserved plots compared to the non-conserved plots. Thus, based on the result it is possible to conclude that average net value of crop income of farmers with conserved plots is significantly higher than those with non-conserved plots.

Key words: West Belessa woreda, soil conservation, propensity score matching, average treatment effect on the treated

***CBEA3: Community Attitudes towards Protected Area Conservation and their
Valuation of Ecological Conservation Benefits: The Case of Semien Mountain
National Park***

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Abstract

Although, protected areas and natural ecosystems are established to conserve biodiversity, enhance eco-tourism, and contribute to the country's national income; the country's protected areas are under enormous pressure from local communities, wildlife populations continue to decline severely, habitats are being lost, and rates of land use change to agriculture and grazing land are increasing at disturbing rates. The local threats usually arise from human encroachment. To save these resources, appropriate conservation strategy must be put in place. The attitudes and feelings of people concerning protected areas and protected area conservation affect their behaviour, and understanding and valuing this is important in involving local people in conservation planning and decision-making processes; and in order to ensure the environmental service provision of the park efficiently and sustainably. So, this study has analyzed the economic values of biodiversity conservation for local communities, taking Semien Mountain National Park as a case, using contingent valuation method (CVM). A contingent valuation questionnaire survey of 250 households from six villages living in and adjacent to Semien Mountain National Park has been carried out to assess attitudes and feelings of local community towards the park; and to evaluate the economic value of the park to the local communities. Descriptive statistics (frequency, percentages, means...) and econometric probit model were used to analyze the data collected. Among respondents, 32.6 % disliked the park conservation program, and 67.4 % supported it. Negative attitudes were linked to loss of resource use rights, livestock depredation and crop damage, and exclusion of farmers from the Park's planning processes. However, most respondents have given positive WTP response for ecological protection. Mean WTP was 24.21 Birr/household/year according to the single dichotomous choice WTP survey responses. Considering large number of people living in the area the aggregate WTP for improved SMNP ecology protection, using this mean WTP response, would be very high. This higher WTP amount may provide funding for a possible ecological management program so as to generate solutions to environmental problems associated with

SMNP. The results of Probit econometric model showed that variables age of the respondent, education level of the respondent, income of the household, benefits generated from protected areas and awareness of the respondent about protected area conservation values influences positively respondents probability of WTP for SMNP protection while household size and initial bid value influences negatively.

Key words: Semein Mountain National Park, Contingent valuation method, Determinants of willingness to pay, Economic valuation, Payment for improved ecological protection, Willingness to pay

CBEA4: ASSESSING THE CHALLENGES OF YOUTH ENTREPRENEURSHIP IN MICRO AND SMALL SCALE ENTERPRISES (THE CASE OF NORTH GONDAR ZONE

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Abstract

Background: Giving young people a real chance in everywhere to find decent and productive work is central; it represents an opportunity to pursue a more balanced and sustainable development, with direct positive consequences for poverty alleviation, promoting social integration and stability. But, today's young generation experiences widening social gaps and In developing countries, rapid changes in the social conditions of young people as a result of changing socioeconomic and policy structures, and wider global change mean that they face a more precarious future than any preceding generation. Thus, at least to minimise such challenges of young people regarding to being unemployed, countries should create conducive environment to promote youth entrepreneurship. Because of this fact, there is a growing interest in understanding the various challenges of youth entrepreneurship. Despite plenty of research conducted on the issues of obstacles of small and micro enterprises, identifying and describing the various challenges of youth entrepreneurship in the particular case study was hardly investigated.

Objective: The main objective of this study was to assess the challenges of youth entrepreneurship on micro and small scale enterprises in North Gondar Zone.

Methods: A standardized questionnaire would be used as an instrument to collect data from a

total population of 13,648 small and micro enterprises in north Gondar zone and the sample size was 402 respondents. The study employed a descriptive survey research type and used stratified sampling technique to gather data from each stratum through simple proportionate stratification.

Results: The overall mean value of challenges of youth entrepreneurship is 2.06, and the mean value of credit access, marketing access, infrastructure availability, training and development, business support, and rules & regulations of the government is less than 2.5 . But, the mean value of managerial skills is 2.69. Except Jana-amora and Quara woreda, the mean value of the rest of the woredas in north Gondar zone lied between 2.00 and 2.50, but for the two exceptional woredas (Jana-amora and Quara) are bellows 2.00.

Conclusions: The survey result confirmed that youth entrepreneurs in the north Gondar zone faced different challenges including poor credit access, education and training, business support, market accessibility, government regulation, and infrastructure. But, managerial skills are not the critical challenges as compared to the above listed one. Among those listed challenges availability of infrastructure and market access have the very lowest mean value or they are the most horrific challenges. Among the different woredas in North Gondar Zone, Jana- amora and Quara are confronted by much wounded challenges than the rest of all.

Key Words: Youth, Entrepreneurship, Youth Entrepreneurship, and Challenges of Youth Entrepreneurs

CBEA5: THE IMPACT OF CORPORATE GOVERNANCE MECHANISMS ON BANK RISK MANAGEMENT: THE CASE OF COMMERCIAL BANKS IN ETHIOPIA

Abebaw Kassie, Meseret Milargeh, Shewit Kinfe

Abstract

Risk is the fundamental element that drives financial behavior. Without risk, the financial system would be vastly simplified. However, risk is omnipresent in the real world. Financial Institutions, therefore, should manage the risk efficiently to survive in this highly uncertain world. The future of banking will undoubtedly rest on risk management dynamics. Only those banks that have efficient risk management system will survive in the market in the long run. There is a growing realization that corporate governance has an impact on enterprise risk management. The main objective of the study is to examine the impact of corporate governance mechanisms on bank

risk management in Ethiopian commercial banks. Panel multiple regressions in which the relationships between credit & liquidity risk with corporate governance mechanism variables are modeled. Panel data set of eight Ethiopian banks over the period 2005 through 2012 is considered to analyze the effect of corporate governance mechanisms on bank risk management in Ethiopian context. The results of the study revealed the following main findings. Management efficiency is found to have positive impact on both risks. Board meeting frequency has negative impact on both measures of risks. Regarding bank size and inflation both have significant impact on credit risk with a negative and positive coefficients respectively, but insignificant for liquidity risk. Based on independent samples T test results, the study revealed no evidence about the difference on risk management between government and private banks using liquidity risk. With respect to credit risk the result confirmed the belief that private banks manage well credit risk than government-owned banks. Generally, the result confirms that corporate governance has an impact on bank risk management.

Key words: Corporate Governance, Risk Management, Bank, Ethiopia

CBEA6: Factors Affecting Quality of Corporate Governance across Share Companies in Ethiopia

Meseret Milargeh, Abebaw Kassie, Fekru Fentahun

Abstract

Nowadays, corporate governance has become increasingly important as it is essential to economic growth and functioning of capital market. This paper studies the effect of firm characteristics on the probability that firms will have stringent corporate governance by examining share companies in Ethiopia. Firm level variables including Future Growth Opportunities, Firm Size, composition of Firm's Assets, Listing in Stock Market, Audit Quality, Ownership Structure, Performance, Leverage and Industry were identified from the corporate governance literature.

Using panel data of 84 share companies obtained from the annual reports of share companies, National Bank of Ethiopia and closed-Ended questionnaire, this study found that future growth opportunities and composition of firm's assets have a statistically significant positive effect on the quality of governance. Size also presents a positive effect on governance for the sample firms. However, it is not statistically significant. Moreover, performance also has a positive

effect on the quality of governance showing that firms with higher performance adopt higher standards of governance. The effect of ownership concentration is ambiguous, so no signal was expected for this variable.

The results of this study are important to the National Bank of Ethiopia and other corporate governance regulators in Ethiopia, in their effort to improve corporate governance practices and probably minimize corporate failure and protect the wellbeing of the minority shareholders. Furthermore, the study contributes to our understanding of the variables affecting the quality of corporate governance in Ethiopia.

Keywords: Corporate governance, corporate governance index, firm performance, share companies in Ethiopia

CBEA7: Community based ecotourism as a tool for sustainable development; a case study on Zegie peninsula, Amhara, Ethiopia

Yenesew Alene

Abstract

Ecotourism has become one of the fastest-growing sectors as well as popular within the last 20 years in the world. Despite this trend, community based ecotourism (CBET) is still at its toddler stage in Ethiopia. This study focuses on the assessment of community based ecotourism as a tool for sustainable development; a case of Zegie Peninsula, Ethiopia. The research was carried out by using potential assessment tools, awareness, participation, empowerment; benefit sharing and capacity building variables as bench mark as objectives on the study area. The methodology employed for this research was descriptive correlation as research design and the instruments were personal observation by the researcher, key informant interviews with people representatives, religious leaders and questionnaires for local communities. Besides, the data were analysed by using ANOVA and t-test. The findings of the research revealed that the peninsula is the right place to successfully develop CBET. It is endowed with all the resources which traps the tourists from the four corners of the world. The level of awareness of the local communities towards community based ecotourism and a related issue was high. The participation and empowerment of the local communities was above average. But, there are no any meaningful practices as far as the benefit sharing mechanisms and capacity building programs are concerned. Furthermore, the findings of this study were portrayed that constraints

such as poor infrastructural developments, (roads, lodge, health care facilities, water supply); serious environmental degradation, being small in size but population growth steadily, lack of commercial facilities are persistent challenges of ecotourism development in the area. At the end, the basic necessities of ecotourists should be available, the awareness of the local communities towards the subject matter should be used as an opportunity to develop CBET successfully, the participation and empowerment of the local communities should be improved furthermore, the benefit-sharing mechanisms and capacity building programs should be devised and applied accordingly.

Key words: Ecotourism, Empowerment, and Benefit Sharing Mechanisms

CBEA8: SITE SUITABILITY EVALUATION OF ECOTOURISM POTENTIALS FOR SUSTAINABLE NATURAL RESOURCE MANAGEMENT AND COMMUNITY BASED ECOTOURISM DEVELOPMENT: THE CASE OF BENCH MAJI ZONE, SOUTH WESTERN PART OF ETHIOPIA

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Abstract

The main purpose of this study is to identify and prioritize the potential ecotourism sites in Bench Maji Zone, Southwestern part of Ethiopia. This work was assessed the potential suitable areas for ecotourism based on bio-physical characteristics of the land ecosystems and socio-economic data. These are landscape (land use land cover), vegetation density (species diversity), topography (elevation and slope) and accessibility (distance from roads). These criteria and factors were selected according to the professional expert's opinions. First, a resource inventory and a list of ecotourism criteria were developed using the Analytical Hierarchy Process method. At the next stage Geographic Information System techniques were used to measure the ranking of different sites according to the set criteria and thus identify those with the "best" potential. Subsequently, the land suitability map for ecotourism was created, based on the linear combination of the criteria and factors with their respective weights. The degree of suitability of each factor was classified as highly suitable (S_1), moderately suitable (S_2), marginally suitable (S_3) and not suitable (N) for ecotourism.

Based from the suitability map, the areas of highly ecotourism potential (S_1) are located in north eastern and western part of the zone especially Shay Bench, North Bench, south western part of

Guraferda, western part of Maji and, some parts of Sheko and Bero. These areas can be used for education as well as natural resource management and community based ecotourism development. It could serve as main ecotourism attractions but with the use of certain limitations and guidelines. The areas of moderately ecotourism potential (S2) are located in north Guraferda, Sheko, Minit Shasha and Goldiya districts. It can be developed as ecotourism destination by facilitating proper ecotourism infrastructure and services. These areas can still be considered for ecotourism attractions. The marginally suitable areas are appropriate for tourism development in general. These areas are located in southern part of Maji and western part of Surma and Minit Shasha. They are the most appropriate areas for development. However, the not suitable areas are currently not suitable for ecotourism, including areas with several effects of development and degraded environment. As concerns of their utilization, they may have some environmental problems but these are controllable. These are located in the central parts of Guraferda, Maji, South Bench, Minit Goldiya, Minit Shasha and eastern part of Surma.

The methodology proposed was useful in identifying ecotourism sites by linking the criteria deemed important with the actual resources of the Zone. This study result helped to identify whether the land has been used by optimally or renovate for future development within Bench Maji Zone. The result appears practically useful for tourism facilities development and ecotourism resource utilization where ecotourism could be more developed in near future. Geographic Information System can then subsequently evaluate dynamic patterns of land use land cover as well as, providing a new tool for ecotourism planning in Bench Maji Zone. Analytic Hierarchy Process was effectively used to calculate the details of the factors and class weights. Likewise, this study can be used as a basis for evaluating the suitability of other areas for ecotourism. Additionally, it may also serve as a starting point for more complex studies in Bench Maji Zone.

Key Words: Suitability, Community Based Ecotourism, Natural Resource Management, Geographic Information System, Analytic Hierarchy Process and Multi Criteria Process

CBEA9: Determinants of household level graduation from Productive safety nets program in food insecure areas of the Amhara region of Ethiopia: a case study in north Gondar zone

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Abstract

Food insecurity in Ethiopia is normally understood in terms of recurrent food crises and famines, and responses to food insecurity have conventionally been dominated by emergency food-based interventions. With regard to this argument, the Ethiopian government launched a social safety net program which is called productive safety net program (PSNP) since 2005. Its objectives are to provide transfers to the chronically food insecure population in a way that prevents asset depletion at the household level and creates productive assets at the community level. PSNP is aimed at enabling the rural poor facing chronic food insecurity to resist shocks, create assets and become food self-sufficient. Hence, what major factors hindered or promoted the intended program to be able to bring the desired outcome was investigated in this study with particular emphasis on North Gondar administrative Zone. The study was heavily dependent on primary data which was collected via a semi-structured/quasi-structured questionnaire collected from 352 households. The socio-economic, demographic variables were analyzed to identify the major determinants of the dependent variable dummy (graduation from PSNP) and for those who graduate to the intended time was designated as Yes and valued 1 and No valued as 0. The binary logistic regression results showed that households total income, livestock owned, total crop production, family size and geographical location were significant variables used to predict households' graduation from safety nets.

Key words: PSNP, North Gondar zone, binary logistic.

4. College of Social Sciences and Humanities, 2013/14

CSSHA1: Soil Fertility Evaluation Using Selected Chemical Indicators for Sustainable Production of Teff (*Eragrostis tef*) in Fogera Wereda, Ethiopia

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Abstract

The need for improved crop productivity is now more than ever because of the increasing rate of population growth and the consequent pressures from competing demands for land over time; reduction in the land-man ratio (land percapita) and soil fertility depletion due to poor management. Although wide range of limiting factors such as physical, economic and social, can restrict suitability of the land for different kinds of uses, the physical limiting factors arising mainly from soils were primarily considered in this study. Typical soils found in the Fogera Wereda were characterized and classified based on their respective chemical parameters which will determine fertility status of land for Teff production. Their potential and associated limitations for rainfed agriculture were evaluated using the simple limitation approach (SLA). The total suitability map resulting from the spatial overlay of layers representing soil quality indicators (SOC, TN, Pav and pH) using SLA indicated that about 10340.53 ha (10.02%), 54641.58 ha (52.96%) and 38195.54 ha (37.02%) of the wereda land was evaluated as highly suitable (S1), Moderately Suitable (S2) and Marginally Suitable (S3) area for sustainable Teff production. This means about 90% of the total area of the wereda requires certain levels of management inputs in the form of fertility correction to obtain optimum production. However, it requires specific knowledge in order to truly maximize yield, minimize cost and to reduce adverse effect on soil/crops. Therefore, soil fertility evaluation based on selected chemical parameters is essential to guide farmers to invest on land use options that would bring the greatest social and economic benefit at a sustainable basis.

Key words: Land-man ratio, soil fertility depletion, Fertility evaluation, Limiting factors, SLA

***CSSHA2: Community Protected Ecosystems in the Tana Region: the Role of
Indigenous Knowledge and Traditional Environmental Attitudes***
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Abstract

Background: Since about 3 years, the preparations for the establishment of a Lake Tana Biosphere Reserve are under way. In July 2014 the application for its recognition by the UNESCO will be submitted. Community Protected Ecosystems, such as Church forests, community forests and area closures, play an important role for the Biosphere Reserve which can be seen as a network of many local protected areas. Likewise, indigenous knowledge and environmental attitudes are important for it because it is part of what the local population may contribute to the overall success of the Reserve. Therefore, this research tried to understand the modes of establishment, maintenance and development of community protected ecosystems in the Tana region.

The research tried to treat the following topics: local indigenous knowledge and its linkage to traditional environmental attitudes and ethics, including related cultural values and practices; the role of the natural environment in the traditional socio-economic system; the purpose of the forest in churches and monasteries; the differences between the Church-related Community Protected Ecosystems and other Community Protected Ecosystems; the traditional, recent and potential cultural role of Community Protected Ecosystems; the history and recent processes of implementation of Community Protected Ecosystems; the impact of environmental degradation and culture change on the local knowledge system and environmental attitudes and ethics; to provide suggestions for sustainable strategies of environmental protection by local communities through the further development of traditional environmental attitudes and indigenous knowledge; to investigate possible approaches for a future community service project.

Methods: Here, the researcher carried out an extensive review of the existing literature dealing with the culture and environment of the study area, and culture ecology in general. Based on a detailed interview guide, they undertook a multi-sited socio-anthropological and ethnographic field research mainly employing qualitative methods such as ethnographic (key informant) interviews, and observation. The exact size and composition of the sample of participants and informants was defined during the research by purposive and snowball sampling. For reasons of transport opportunities, research infrastructure and methodological considerations the researchers choose Dera Wereda as the main focal area. Around 20 in-depth interviews were conducted in the following places (including church forests, community forests and area closures): Bahir Dar; Qwala Yohannes (near Addis Zemen); Tara Gedom (near Addis Zemen); Zara Mikael, Hamusit (Dera Wereda); Wanzaye (near Hamusit); Anbesami (Dera Wereda); Emashango Gabriel (near Anbesami); Shime Maryam (Dera Wereda); Arb Gebeya (Dera Wereda); Gelawdewos/Nifara (Dera Wereda); Garagara Mikael (near Anbesami); Qolle Maryam (near Debre Tabor). Some of the places were visited more than once. The successful building up of a network of researchers and stakeholders active in research preparing the Biosphere Reserve (NABU, ARARI, Succow Foundation, Forest Project of Colgate University, USA) allowed theoretical and practical synergies. Especially to be mentioned here is the cooperation with Dr Alemayehu Wassie, the “father of church forest studies”, and Dr. Izabela Orlowska (Colgate University), the latter joining the researchers in two of their fieldtrips.

Results: The interviews informed the researchers about (1) the general local history of each place; (2) the history of each protected area in particular and the different existing categories of protected areas; (3) strategies of environmental protection (forest, individual trees, waterbodies, soil) and usage applied by authorities as well as local people; (4) the attitudes of the population towards the protected areas and nature in general; spiritual dimensions of the environment; (5) indigenous knowledge concerning plants and animals. Especially points 1-4 could be addressed properly while point 5 needs further investigation. Part of the results is also a better understanding of the government policy towards environmental protection as well as of the plans concerning the Biosphere Reserve. Interviews are documented in digital and written form and are thoroughly analyzed in the present phase. Photo documentation covers all sites and exemplary cases. Based on Google maps and other material detailed maps of a number of research sites have been produced for further analysis. As a result of the networking, a panel

will be held at the International Conference of Ethiopian Studies in Warsaw in 2015, followed by a publication.

Conclusions: Since not all of the material underwent full analysis by a Grounded Theory approach conclusions can only be preliminary. Based on the objectives of the research the following general thoughts can already be stated: The “natural environment” in the region is since long time highly influenced by human activity. The topography is shaped to some degree by humans (dams, gullies, leveling of land), the soil is laid open to be exploited for agriculture and changed by the effects of plants grown and fertilizer used, the water flows are controlled, harvested, used, and polluted. The micro- and macro-climate influenced; unwanted plants are cut or uprooted, wild animals are hunted or their habitats are reduced. Thus, there is no untouched “natural environment” anymore. Even the small pockets of wild forest are developing not undisturbed due to intruding humans and domestic animals, and there eco-systems are influenced by the surrounding cultivated lands. Therefore, the whole of the research area including the areas spared by human usage can be labeled as cultural or cultivated landscape. However, the socio-economic system deeply depends on the natural conditions, which are now natural-cultural conditions. The fertility of the soil and the water resources are crucial for the survival of the community. The “unwanted” and wild plants contribute to the protection and amelioration of soils, water resources, provide oxygen, and stabilize the micro-climate as do the cultivated plants. Their diversity provides a resource for traditional medicine as well as for future potential uses. Moreover, they provide shade and beauty for recreation and spiritual contemplation. The wild animals are part of the eco-system which play an important role in connecting different areas, e.g., by spreading seeds. Plants and animals form common ecosystems in which any change of one element of the system changes the balance of the whole.

Such fully functioning eco-systems are today rare, shrinked and separated from each other by human cultivation. However, when or where undisturbed for a while, nature finds its way to recover. In the research area, on cultivated lands, the original genetic diversity of plant life is still preserved in the soil because cultivation in most areas is relatively young. Some animals are extinct or about to be extinct but most of them would recover if conditions change.

Apart from the indirect economic values of the “relatively natural” areas of the research area (community and state forests, “Church forests”, area closures) they still also have great direct economic importance. They provide plants and animals for traditional medical use, honey, grass, firewood, and precious indigenous timber. The leaves of certain indigenous trees, planted and grown naturally, contribute to the fertility of the soil, others are used as fodder for domestic animals.

The forests of churches and monasteries are usually conceptualized by scholars as so-called “Church forests”. This concept is not false but it tends to mislead, especially nonEthiopians. The English word “church” has two meanings, (1) the building where church service is celebrated and (2) the community and institution as a whole and on the local level. The second meaning applies also in the Ethiopian Orthodox Church but concerning the first meaning there is a wider meaning than in English. Bete Kristyan may mean the church building with the Tabot but it is also used for the area that surrounds the church which belongs to it not only as possession but also as a part of the whole. The church in this sense is the entire area blessed by the presence of the Tabot and put under the protection of the church law (wugezat). This whole area is called the asset. It is spatially organized in concentric circles beginning from the tabot and meqdes. The spatial organization defines different usage and purposes. The area from the wall of the church building to the inner circle of the asset is called arba qind (although it does not necessarily measure 40 qind). In this area graves are not permitted. It is usually - but not always - surrounded by the inner wall. The area between this wall and the outer boundary of the asset can be used as a graveyard and is what is usually called the “forest” (interviews with priests and church elders).

Most community protected ecosystems relevant for this issue are the so-called “area closures”. An area closure is mostly established by the initiative of the local community on the qebelelevel. It seems that only two types of areas are chosen for this, former grazing areas which are heavily degraded and - in some rare cases - areas around springs. An area closure means that any usage of it is forbidden, especially grazing and cutting trees and shrubs. Violation of this is sanctioned by fines in money whose amount highly varies from place to place. Also other forms of punishment are reported. The community assigns guards to protect the area closures. However, area closures still serve different economic purposes. While domestic animals are prevented from grazing, the grass is cut and used as fodder, the so-called cut-and-carry

system. In some cases the cutting of grass is the privilege of the guards which adds to the very low payment they get from the community. In some area closures beehives are installed and honey is produced for the members of local honey associations or for selling for income for the community.

Keywords: indigenous knowledge, environmental attitudes, social anthropology, oral tradition, community protected ecosystems, church forests, non-church forests, environmental protection, Ethiopia.

CSSHA3: Analysis of Drought Duration, Magnitude and Severity/Intensity in Spatially different Agro-ecologies of Northwest Ethiopia

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Abstract

Background: Drought is a natural hazard which can be marked by precipitation deficiency that threatens the livelihood resources and overall development efforts of nations or specific places through exacerbating water shortage for some activity or for some group. Therefore, analysis of drought frequency/pattern, duration, magnitude and severity is highly demanded for designing appropriate actions in the countries like Ethiopia. Drought duration is the period between drought starts and ends which can be expressed in months or years.

Objective: The objective of this paper is to analyze the drought duration, and magnitude severity in spatially different agro-ecologies of Northwest Ethiopia.

Method: Meteorological records were gathered from Global Weather Data Center for SWAT spanning from the period 1979 to 2010. Although most drought analysis used the monthly time scale, the yearly scale was selected for the purpose of this study because of the comparative nature of the study. If the monthly scale was used, the presentation would be complicated and would make the result much bulky. Standardized precipitation index (SPI) was used to analyze the drought severity, duration and magnitude. Graphs were used to illustrate the results of the long-term drought patterns for the dega, woyna dega, and kolla agro-ecologies of northwest Ethiopia.

Results: The result has shown significant variation in drought duration, magnitude, and intensity in the three study sites based on the calculated SPI values. It is apparent from the result that long drought duration occurred in the *dega* site with 18 years, 12.16 magnitude, and 0.72 intensities. The drought characteristics in the *woyna dega* site was found to be 12.54 magnitude and 1.05 intensity in the 12 years of duration whilst in the *kola* site, 13.53 magnitude and 1.04 intensity were computed in 15 years of duration. Although long drought duration was detected for *dega* site, higher drought intensity was detected in *kolla* and *woyna dega* sites. This finding is supported by Otgonjargal (2012) who underlined that drought year lasted for 17 months has higher magnitude (20.1) than the drought with a magnitude of 17.3 and 22 months duration indicating that longer drought durations are not necessarily the severe ones.

Conclusions: Although long drought duration was detected in *dega* agro-ecology, higher drought intensity was identified in *kolla* and *woyna dega* sites. That means short drought duration in *kolla* and *woyna dega* resulted in very high drought intensity. From this one can conclude that the long drought duration is not the severe one.

Key words: Drought; Drought Duration, Magnitude and Intensity, Standardized Precipitation Index; Agro-ecology, Northwest Ethiopia

CSSHA4: Local Dispute Settlement Mechanisms at North Gondar Zone: The Case of Chilga Woreda

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Abstract

Background: Disputes are common in developing countries where there is scarce resource, widespread poverty and limited participation in economic, political and social agendas. As a result death and displacement are some to mention. A thorough understanding of the nature and the causes of dispute is essential in order to develop effective strategies and policies for its settlement, i.e., peace-building and sustainable development.

Methods: Both primary and secondary data collection instruments employed to collect information in the study area. Data collection tools such as interviews, focus group discussions, observations, documents both published and unpublished employed and reviewed. Information gathered through the two sources analyzed qualitatively.

Results: The finding of the study shows that the wider application of local dispute settlement mechanisms in the area. Chilga woreda practices such dispute settlement mechanisms using elders at different levels. Starting from the immediate village level to the wider community level elders committee established. These committees are members of the community and selected by themselves. The members are highly respected, very much experienced and directly responsible for the community say on dispute settlement. Moreover, elders committee, which locally called to be *Demeadreq*, are fully authorized not only by the community but also by the local court. Thus, cases for settlement came either from the community or from the local court. In fact, serious civil crises are not entertained. Cases such as children and women abuse, rape and others are good examples.

Conclusions: Local dispute settlement mechanisms of Chilga woreda are playing indispensable role in solving different community level conflicts. This is now run in the community in more organized form. Different village and woreda level committee organized for this purpose. This indicates that the community is ready to handle different cases and seek for solutions by themselves. This is because they have strong attachment with this committee. However, relationship between local dispute settlement mechanisms and the formal legal system needs to be clarified so as to run cases in more cooperative ways.

Keywords: Local Dispute Settlement, Cases, Court, Chilga.

CSSHA5: Prevalence and associated factors of divorce in Metema district, northwest Ethiopia

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Abstract

Background: In most cases, the rate of divorce in Ethiopia is expected to range between 45% and 53% (Tilson & Larson, 2000) though there is not research report on its prevalence in

Metema district that assures this report valid in the area. Likewise, factors contributing for divorce have not yet been scientifically studied in Metema.

Objectives: The research has two vital objectives: (1) to identify the prevalence of divorce in Metema district; and (2) to examine associated factors for the prevalence of divorce in the area.

Methods: A cross-sectional survey research design, based on 384 sampled families having marital experiences (192 males and 192 females), was used. A systematic sampling technique was used to select the participants. Data were collected by the researchers and enter a computer using Epi Info version 3.5.1, and exported to PASW version 18 for analysis. A Binary Logistic Regression (using the backward method) was fitted. At 95% confidence interval, Odds ratios were calculated for identifying associated factors for divorce.

Results: Among the total 384 participants, 225 (58.6%) have lost their first marriage due to divorce.

There were almost similar first marriage divorce rates for both female 58.9%) and male (58.3%) participants. Among the variables included in the model, sexual incompatibility was 3.33 times more likely to increase first marriage divorce than sexual compatibility. Infidelity suspicion among spouses, higher parent-in-law interference, illiteracy, marital discord, and chronic health problems had positive relationships with divorce having odds ratio of 3.13, 3.11, 3.07, 2.83, and 1.97, respectively. However, number of children during first marriage (OR=0.652), spouses' cooperativeness (OR=0.402), and religiosity (OR=,0.343) were found negatively related with divorce in the Metema.

Conclusions: There is a high rate of divorce in Metema district due to sexual incompatible, infidelity suspicion, higher parent-in-law interference, illiteracy, marital discord, and chronic health problems during first marriage. Therefore, divorce in the study area is related with both the sociocultural and sociodemographic characteristics of spouses. We recommend concerned bodies to arrange pre and post-marriage counseling and education services to the district community.

Keywords: divorce, Metema, factors for divorce

CSSHA6: An Assessment of the Socio-economic Conditions of Older People in Gondar Town: Setting a Ground for Intervention

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Abstract

Background: Ageing of the population has become one of the defining global issues that will shape the future of the world's societies. Old people are important members of a given society. They play a pivotal role to their families and communities in any society today. Millions of families would not survive without the contribution of older people—from caring for orphaned grandchildren to providing much needed household income. Despite this indispensable contribution, their needs are often overlooked by development programmes and services. In addition, the extent of attention and services given to this group varies considerably. Hence, this study is designed to examine the socioeconomic conditions older people in Gondar Town.

Objectives: The main objective of the study is to assess the socioeconomic conditions older people in Gondar Town. The specific objectives of the study include (1) to examine the economic conditions of older people in Gondar Town, and (2) to investigate the social conditions of older people in Gondar Town.

Methods: In addressing this objective, a cross-sectional descriptive design was used. Data relevant to the stated objective was collected using a combination of techniques. These include key informant interview, life history, biographical interviewing, case study and secondary analysis. The data was analyzed using thematic analysis.

Results: the study findings indicated that many older people continue to experience deepening poverty, discrimination, violence and abuse, and are unable to access entitlements that are theirs by right. They experience economic exclusion, and are often denied employment and access to insurance or credit schemes. They also encounter social exclusion due to age discrimination and changing roles and practices within the family. The social and economic wellbeing of older people is worsening.

Conclusion: the findings of the study pointed out that older people experience weakening social and economic wellbeing. Hence, a coordinated and concerted effort should be made to boost the social and economic life of older people in the Town.

Key words: older people, socioeconomic condition

CSSHA7: Oral Traditions, River Abay and the Ethiopian Public: A Historical Reappraisal, Evidences from North and South Gondar

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Abstract

Background: Oral traditions are aspects of human heritage. Particularly in Africa without oral tradition, it is difficult to write history. The Ethiopian experience is not an exception. Ethiopian intangible heritages reside along oral literary traditions such as music, proverbs, poems and sayings, naming performed in association with feelings and perceptions. The objective of the study was to investigate the historical and cultural values the wider Ethiopian public attributed to the mighty river Abay by analyzing oral traditions on the river such as: sayings, poems, songs and spiritual practices.

Methods: qualitative research method was employed to collect valuable evidences / data / to this paper. Sources were collected in various techniques and triangulated to substantiate the research.

Results: the verses of many kinds, and sayings revealed the extents of transcend identity and belongingness to the river Abay. The data analyzed signified the mighty river personified and syncretized with the living conditions of the community. In most instances glorified, considered as source of pride and paradoxical feelings. It has been also a religion of the public for millennia.

Conclusion: Traditions are sources of inspiration and innovation. The feelings and perceptions of the public towards Abay river and its water shows the deep passion and affiliation as well as mingled identity the river and Ethiopians has since time in memorial These affiliations and feelings found to be magnificent for development and knowledge transfer and propagation

Keywords: Verse, Heritage, Paradox, Affiliations, poems, Songs and Sayings and Spiritual Practices.

**CSSHA8: HERITAGE PERSONIFICATION PROCESSES FROM EMPEROR
HAILE SELASSIE TO PRIME MINISTER MELES**

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Abstract

Background: Heritage personification refers to the representation of the heritage in human form or associating it with individuals or groups of people. It is one way of heritage reinterpretation in ‘biographic character ...’ by giving more attention to life of leaders. This was reflected in Ethiopia when most of the institutions were named after Emperor Haile Sellassie or his family.

Methods: Data collected through literature reviews, questionnaires, interviewing important informants and direct observations

Results: In non democratic countries heritage properties have been altered to suit changing political circumstances. Thus, the Derg regime renamed these institutions. The current government focuses on collective memories at Mekele, Bahir Dar and Adama for the fallen of the last thirty years Ethiopian civil war, and at Addis Ababa for victims of Red Terror. At the moment, the late Prime Minister Meles became the focus of the heritage personification as many institutions including about two hundred fifty newly planted parks are named after him and his vision and legacies are inherited as the government agenda.

Conclusions: the authenticity of cultural heritages is questioned due to heritage personification and cultural politics of this heritage personification process in Ethiopia for the period from Emperor Haile Sellassie to Prime Minister Meles.

Keywords: Heritage, heritage personifications, cultural politics.

CSSHA9: The Paradox of Ethiopian Revolution: A Historical Survey of the Tragedy of Red Terror versus White Terror in Gondar Region, c.1974-1980s

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Abstract

Background: Political violence and terror in Gondar region that traced back to the medieval period until 1974 are understudied subjects in Ethiopian history. However, the “red terror” used by the Derg against EPRP’s (Ethiopian People’s Revolutionary Party) action- “white terror” was the most systematic and horrifying action led to blood-letting of intellectuals mainly in the city of Gondar and other districts from its inception to the 1980s. The objective of this study, therefore, was to assess the cause, course and impact of red terror versus white terror on human rights, democracy, economic development and socio-cultural life of the society in the study area.

Methods: A historical research method with intensive semi-structured in-depth interviews, focus group discussion and observation were conducted among Derg officials, EPRP members, non-partisan civilians and victims of torture in Gondar city, Debre Tabor, Addis Zemen, Debark, Dabat, Chilga, Wagara, and Janamora districts from January to May 2014. The study also used different primary and secondary sources such as documents, records, archives, books, journals, articles and newspaper. Data were carefully cross-checked, triangulated, analyzed and interpreted by employing a qualitative research approach.

Results: Gondar which was the centre of Ethiopian renaissance and capital of the empire for two centuries since the 17th century; but in the late 1970s, *Ras* Gimb palace and Bahta Prison in Gondar city and other *awraja* and district capitals became centers of human tragedy. This made Gondar to be either first or next to Addis Ababa where about 3000 youths were tortured and slaughtered. Evidences witnessed that about more than three thousand youngsters were inhumanly butchered by Major Melaku Tefera and his subordinates, while 30,000 suspects were tortured, mutilated, disabled, deformed and disappeared. And about 60,000 suspects were detained without law in different prisons. Not only the Derg, but EPRP, MEISON and other opposition groups could also be responsible for the death of a considerable number of the youth

and for the political, economic, and socio-cultural crisis. The psychological and physical damage of red terror on the people continue to exist to confound identity and politics in Ethiopia and shock those old enough to remember it.

Conclusions: Although the Derg introduced some reforms such as land and literacy campaign, the Revolution was aborted, terror triumphed. It failed to bring radical political, economic and socio-cultural transformation. Horribly above all, the Revolution devoured the existing generation. Totalitarianism, political violence, civil war, absence of the rule of law, poverty, immigration, economic stagnation, social and cultural crisis were the main features of the military regime in the present North and South Gondar Zones.

Keywords: Ethiopian Revolution, Red Terror, White Terror, Derg, EPRP, torture

CSSHA10: A Historical Survey of Ethiopian Minstrels: Indigenous Musicians and Singers (Azmaris) in Gondar province
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Abstract

Background: Azmaris in Ethiopian tradition has been enshrining well in various political and social makeup of the society. They were employed by the nobilities in the imperial periods of the country ranging from the king all the way to the next hierarchy purposely not only for entertainment but for their skill of repertoire and representing ‘media’ for (how peaceful the people of the country are/were) as such to bridge the king and his dignitaries as well as the whole system throughout his /her realm. They remained an engine for moral life for every one as well as voice for the voiceless section of the society in many occasions of history for that they were tortured and of course praised in most events. They were also known in exposing what is going on in the king court and the society. Begemdir-Semien province has had a well established azmaris institution. Places like Burbuax, Wägära, Emfranz, Wälqayit-Ṭägädé, Alefa takusa ,

Belesa , Amora Gedel areas and others have been centers of the rise of prominent poet musicians /azmaris /in the province in particular and the country in general.

Objective: the objective of the paper was to survey the role azmaris played as 'literate' segment of the society in catalyzing divergence issues raised by the wider public against systems and ways of life in the study area.

Method: Qualitative research method was employed to obtain substantive data. Using primary and secondary sources as per the specific objectives of the research which was crosschecked each other for reliability and objectivity.

Results: Azmaris were influential groups of the society. As the data collected and analyzed and historicized shows this section of the society were in the center of culture and the art of entertainment ,and spokes person of the public in most case criticize officials as well as the public for the benefit of the nation or the province in its narrower sense

Conclusion: They were acknowledged by the system bridging the king down to the common people. Thus, the study witnessed the central role azmari played in entertainment, critics of wrong practices and maintaining cultural identities by composing public experiences in their colorful verses.

Keywords: Azmari, verses, voice for voice less, cultural marker, 'literate'

- *CSSHA11: Magnitude of Child Abuse in Metema Woreda, Northwest Ethiopia*
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Mitiku

Abstract

Background: Child abuse remains a pervasive and serious social problem, and continues to have a negative effect on children. As children are the most vulnerable members of societies prone to victimization by those who are stronger than them or by whom they depend on for care and protection. But this issue is largely ignored in many parts of the world, particularly in Africa. This is certainly the case in Ethiopia where children regularly face humiliating physical, sexual and emotional abuse at home, in school and in the community at large. However, what makes the problem of child abuse more challenging is there is little understanding, if any, of how harmful such violence can be to a child's development, growth, and survival. Hence, addressing the

complex and multifaceted problems they are facing through a multidisciplinary approach is indispensable. Thus, this study tried to assess the magnitude of child abuse in Metema district, Northwest Ethiopia.

Methods: A community based quantitative dominated mixed with a cross-sectional study design was employed in Metema district in April 2014. Data were collected using structured interviewer administered Amharic version questionnaire after getting full consent from each participant. Additionally, a focus group discussion was conducted with purposively selected community members, key informants, and community leaders. Each completed questionnaire was checked for completeness and entered to EPI INFO version 3.4.3 and clean up was made to check consistency and any error identified was corrected. Finally data were exported to SPSS version 20 for analysis. Descriptive statistics like frequencies cross tabulation and appropriate tests were made for most selected variables in the study. Thematic content analysis was used for most selected qualitative variables.

Results: more than third quarter (82.2%) of the respondents experienced physical abuse. The most common type of physical abuse includes hitting, punching and slapping. Physical abuse also takes other forms such as pushing, shoving, pinching, or kicking and labor abuse. Mostly physical abuse is committed by mothers and teachers even though fathers, family and relatives also abuse children. About 49% of the respondents also experienced emotional abuse. The commonest type of emotional abuse includes ridicule, dismiss, and disregard opinions, thoughts, suggestions, and feelings. Mostly emotional abuse is committed by mothers followed by family members, friends and fathers. About 12% of the respondents experienced sexual abuse. The perpetrators of sexual abuse include friends, unknown person, teachers and relatives.

Conclusion: the findings of this study indicated that child abuse is prevalent in Metema district manifested in terms of mainly physical and emotional abuse. Non penetrative sexual abuse is also common in the area. Hence, we recommend the development and implementation of child protection policies and regulations.

Key Words: *Child, child abuse, physical abuse, Sexual abuse, emotional abuse, Metema*

***CSSHA12: Assessment of the Magnitude of Child Trafficking via Metema Route,
Northwest Ethiopia***

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Abstract

Background: The problem of child trafficking has got hyper attentions of researchers, practitioners and policy makers in the contemporary world. Its prevalence has sharply gone up, although the reliable statistical data does not prevail due to the nature of the problem itself (Calandruccio, 2005; Adesina, 2014). The issue is assumed to be higher in an alarming rate in Ethiopia but empirical reports were scanty. Particularly, the magnitude of child trafficking via Metema route has not yet been scientifically investigated beyond speculation.

Objectives: the main intention of the research is to uncover the magnitude of child trafficking via Metema route depending answering questions: What is the level of both internal and transnational child trafficking via Metema? Which parts of the country are the sources areas for child trafficking via Metema? What is the distribution of child trafficking across socio-demographic and socioeconomic statuses? Who are the traffickers? And what is the modus operandi applied by traffickers via Metema route?

Methods: A cross-sectional qualitative research design using key informant interview, FGD, and document analysis was implemented.

Results: The findings indicated that everyday many children are trafficked from poor families of different parts of Ethiopia, including Jimma, Wolayta, North Gondar (Janamora, Beyeda, Debark, Adiarkay, Tselemt, Wogeraand Dembia), and others via Metema route. Female children were most vulnerable group of victims. The majority of traffickers were Ethiopians having a route-wise clandestine communication networks; although with the Sudanese traffickers who take the responsibility to traffic beyond the border. Findings also revealed that chief traffickers always contact their victims only through the 'Shakabas' – intermediate assistant trafficker working among the victims, chief Ethiopian traffickers, and the Sudanese traffickers. Some of the modes operandi used by the traffickers to sustain their crime include: applying different disguising methods at the source areas; being aware of the legal and administrative processes in the country; and use local people familiar to the potential victims during recruiting.

Conclusion: Generally, child trafficking via Metema route is getting raised in its magnitude from time to time. Many traffickers at different level are involved in the process of trafficking poor children recruited from different parts of the country. This challenges the actions taken by the local government official against the crime. Trafficked children are mostly arrested when they are found crossing the Ethio-Sudanese border since arresting on the way to Metema contradicts to the rights to free movement of citizens with the nation.

Key words: child trafficking, Metema, traffickers, shakabas

*CSSHA13: Magnitude of Child Neglect in Metema District, Northwest Ethiopia
Tesfaye Tafere, Mebratu Mitiku, Dagnachew Muluye, Solomon Getu, Semalegne Kendie,
Kasaw Adane, Akilew Awoke, Ajanaw Alemie, Hana Shewamoltot, , Meseret Zewdu, &
Melkamu Sisay*

Abstract

Background: Child neglect is deemed to be a deep-rooted and extremely damaging form of child maltreatment in the world. But it is not researched well. The magnitude of child neglect is not well-studied in Ethiopia, particularly in Metema district. Therefore, this study, as part of the child maltreatment research project, is intended to assess the magnitude child neglect in Metema district.

Objective: The aim of this research, as part of child maltreatment trans-disciplinary research project, is to assess the magnitude of child neglect in Metema district, Northwest Ethiopia.

Methods: This community based cross-sectional research was conducted in Metema district in 2014. A mixed research approach with concurrent procedure was employed. A total of 413 children aged less than 18 years were included from both rural and urban areas of the district. A purposive sampling technique was also used to select participants for in-depth and key informant interview. A structured questionnaire was used to gather data for the quantitative part of the study while interview guides were for the qualitative part. Epi Info version --- used to enter data later transported to the SPSS version 20 for analysis. Descriptive statistical tools like percentage, frequencies, median, and so on have been used during analysis.

Result: The findings of the research indicated that all the three types of child neglect were highly prevalent in Metema district with varying degrees. Four hundred seven children aged from 10 to 17 were included in the study out of which 211 were boys and 195 girls. About 21.1% of

participants were engaged in some type of work. Among the indicators for physical neglect, giving drugs bought from market accounts for 48.2%, taking adult drugs 35.6%, and delayed medical treatment 25.5%. Similarly, the emotional neglect indicators such as witnessing family fighting (47.2%), repeated family complaint on children (40%), absence of rewards for good deeds (34.2%), failure to express closeness (26%), and punishment by letting children spend a night outside home (25.5%) are the most important ones. Regarding developmental neglect, being absent from school for household chores accounts for 37.6%, discouraging to talk what they know for 37.8%, failure to enroll children at the age of 7 for 32.7%, and denying children to know their surroundings for 32.2%. This discloses that the issue of child neglect is common in Metema district.

Conclusion: Children the Metema district experiences all forms of child neglect either by their parents or other caregivers. Developmental and emotional neglects were more prevalent than the physical neglect in the study area due to many factors which needs actual investigation.

Key words: child neglect, physical neglect, emotional neglect, Developmental neglect, Metema

CSSHA14: Pupil's understanding of theme in selected children's literature: a comparative study of first cycle school children in Gondar city and selected Gondar

Zuria Woredas

Rahwa Yousuf, Ashenafi Alemu, Tigist Girma, Anteneh Demeke

Abstract

Children's literature is literature in any sense of the term which assumes particular target audience i.e *children*. Scholars argue that books for children are making important contribution as to the formal school curriculum. In line with this, the objective of the study is to identify pupils' level of capturing theme in Amharic children literature books. Parallel, the study intends to provide information regarding the availability and familiarity of children's literature at schools in Gondar which can be drawn by implications. Two schools at Chilga and Woreta were selected based on recommendations and consultation from the Education Bureau of North Gondar administrative zone. For this preliminary finding, the data from the two schools at Chilga is used, namely Serako elementary School and Aykel Ful cycle School. An Amharic children's book entitled YES I CAN, published in Gondar is used to prepare a test for selected children in Chilga and Woreta. Results of the test are compared by using descriptive statistics such as mean

rating. The tests show that students have a very good sense of capturing theme with a large majority of them (over 80%) providing correct answers. In contrast to this, only a small number of children at the schools (38%) were capable of identifying characters in the story. These imply that learners are not familiar with the concept of literature and elements of fiction. In contrast, it may be noted that the learners have good reading and comprehension skills. Learners should be exposed to elements of fiction and reading literature so as to raise their awareness of fiction and critical thinking skills. Based on the observations made at the schools, it is also essential to make children's literature part of the school library collections which are missing.

Key words: children, literature, theme, Gondar, Amharic

***CSSHA15: Magnitude of Child Abuse in Metema Woreda, Northwest Ethiopia
Akilew Awoke, Ajanaw Alemie, Hana Shewamoltot, Semalegne Kendie, Kasaw Adane,
Tesfaye Tafere, Dagnachew Muluye, Meseret Zewdu, Solomon Getu, Melkamu Sisay &
Mebratu Mitiku***

Abstract

Background: Child abuse remains a pervasive and serious social problem, and continues to have a negative effect on children. As children are the most vulnerable members of societies prone to victimization by those who are stronger than them or by whom they depend on for care and protection. But this issue is largely ignored in many parts of the world, particularly in Africa. This is certainly the case in Ethiopia where children regularly face humiliating physical, sexual and emotional abuse at home, in school and in the community at large. However, what makes the problem of child abuse more challenging is there is little understanding, if any, of how harmful such violence can be to a child's development, growth, and survival. Hence, addressing the complex and multifaceted problems they are facing through a multidisciplinary approach is indispensable. Thus, this study tried to assess the magnitude of child abuse in Metema district, Northwest Ethiopia.

Methods: A community based quantitative dominated mixed with a cross-sectional study design was employed in Metema district in April 2014. Data were collected using structured interviewer administered Amharic version questionnaire after getting full consent from each participant. Additionally, a focus group discussion was conducted with purposively selected community members, key informants, and community leaders. Each completed questionnaire was checked

for completeness and entered to EPI INFO version 3.4.3 and clean up was made to check consistency and any error identified was corrected. Finally data were exported to SPSS version 20 for analysis. Descriptive statistics like frequencies cross tabulation and appropriate tests were made for most selected variables in the study. Thematic content analysis was used for most selected qualitative valuables.

Results: more than third quarter (82.2%) of the respondents experienced physical abuse. The most common type of physical abuse includes hitting, punching and slapping. Physical abuse also takes other forms such as pushing, shoving, pinching, or kicking and labor abuse. Mostly physical abuse is committed by mothers and teachers even though fathers, family and relatives also abuse children. About 49% of the respondents also experienced emotional abuse. The commonest types of emotional abuse includes ridicule, dismiss, and disregard opinions, thoughts, suggestions, and feelings. Mostly emotional abuse is committed by mothers followed by family members, friends and fathers. About 12% of the respondents experienced sexual abuse. The perpetrators of sexual abuse include friends, unknown person, teachers and relatives.

Conclusion: the findings of this study indicated that child abuse is prevalent in Metema district manifested in terms of mainly physical and emotional abuse. Non penetrative sexual abuse is also common in the area. Hence, we recommend the development and implementation of child protection policies and regulations.

Key Words: Child, child abuse, physical abuse, Sexual abuse, emotional abuse, metema

***CSSHA16: Assessment of the Magnitude of Child Trafficking via Metema Route,
Northwest Ethiopia***

***Semalegne Kendie, Kasaw Adane, Akilew Awoke, Ajanaw Alemie, Tesfaye Tafere, Hana
Shewamoltot, Dagnachew Muluye, Meseret Zewdu, Solomon Getu, Melkamu Sisay &
Mebratu Mitiku***

Abstract

Background: The problem of child trafficking has got hyper attentions of researchers, practitioners and policy makers in the contemporary world. Its prevalence has sharply gone up, although the reliable statistical data does not prevail due to the nature of the problem itself (Calandruccio, 2005; Adesina, 2014). The issue is assumed to be higher in an alarming rate in

ethiopia but empirical reports were scanty. Particularly, the magnitude of child trafficking via Metema route has not yet been scientifically investigated beyond speculation.

Objectives: the main intention of the research is to uncover the magnitude of child trafficking via Metema route depending answering questions: What is the level of both internal and transnational child trafficking via Metema? Which parts of the country are the sources areas for child trafficking via Metema? What is the distribution of child trafficking across socio-demographic and socioeconomic statuses? Who are the traffickers? And what is the modus operandi applied by traffickers via Metema route?

Methods: A cross-sectional qualitative research design using key informant interview, FGD, and document analysis was implemented.

Results: The findings indicated that everyday many children are trafficked from poor families of different parts of Ethiopia, including Jimma, Wolayta, North Gondar (Janamora, Beyeda, Debark, Adiarkay, Tselemt, Wogeraand Dembia), and others via Metema route. Female children were most vulnerable group of victims. The majority of traffickers were Ethiopians having a route-wise clandestine communication networks; although with the Sudanese traffickers who take the responsibility to traffic beyond the border. Findings also revealed that chief traffickers always contact their victims only through the '*Shakabas*' – intermediate assistant trafficker working among the victims, chief Ethiopian traffickers, and the Sudanese traffickers. Some of the modes operandi used by the traffickers to sustain their crime include: applying different disguising methods at the source areas; being aware of the legal and administrative processes in the country; and use local people familiar to the potential victims during recruiting.

Conclusion: Generally, child trafficking via Metema route is getting raised in its magnitude from time to time. Many traffickers at different level are involved in the process of trafficking poor children recruited from different parts of the country. This challenges the actions taken by the local government official against the crime. Trafficked children are mostly arrested when they are found crossing the Ethio-Sudanese border since arresting on the way to Metema contradicts to the rights to free movement of citizens with the nation.

Key words: child trafficking, Metema, traffickers, shakabas

***CSSHA17: Magnitude of Child Neglect in Metema District, Northwest Ethiopia
TesfayeTafere, Mebratu Mitiku, Dagnachew Muluye, Solomon Getu, Semalegne Kendie,
Kasaw Adane, Akilew Awoke, Ajanaw Alemie, Hana Shewamoltot, Meseret Zewdu &
Melkamu Sisay***

Abstract

Background: Child neglect is deemed to be a deep-rooted and extremely damaging form of child maltreatment in the world. But it is not researched well. The magnitude of child neglect is not well-studied in Ethiopia, particularly in Metema district. Therefore, this study, as part of the child maltreatment research project, is intended to assess the magnitude child neglect in Metema district.

Objective: The aim of this research, as part of child maltreatment trans-disciplinary researchproject, is to assess the magnitude of child neglect in Metema district, Northwest Ethiopia.

Methods: This community based cross-sectional research was conducted in Metema district in 2014. A mixed research approach with concurrent procedure wasemployed. A total of 413 children aged less than 18 years were included from both rural and urban areas of the district. A purposive sampling technique was also used to select participants for in-depth and key informant interview. A structured questionnaire was used to gather data for the quantitative part of the study while interview guides were for the qualitative part. Epi Info version --- used to enter data later transported to the SPSS version 20 for analysis. Descriptive statistical tools like percentage, frequencies, median, and so on have been used during analysis.

Result: The findings of the research indicated that all the three types of child neglect were highly prevalent in Metema district with varying degrees.Four hundred seven children aged from 10 to 17 were included in the study out of which 211were boys and 195 girls. About 21.1% of participants were engaged in some type of work. Among the indicators for physical neglect, giving drugs bought from market accounts for 48.2%, taking adult drugs 35.6%, and delayed medical treatment 25.5%. Similarly, the emotional neglect indicators such as witnessing family fighting (47.2%), repeated family complaint on children (40%), absence of rewards for good deeds (34.2%), failure to express closeness (26%), and punishment by letting children spend a night outside home (25.5%) are the most important ones. Regarding developmental neglect, being absent from school for household chores accounts for 37.6%, discouraging to talk what

they know for 37.8%, failure to enroll children at the age of 7 for 32.7%, and denying children to know their surroundings for 32.2%. This discloses that the issue of child neglect is common in Metema district.

Conclusion: Children the Metema district experiences all forms of child neglect either by their parents or other caregivers. Developmental and emotional neglects were more prevalent than the physical neglect in the study area due to many factors which needs actual investigation.

Key words: *child neglect, physical neglect, emotional neglect, Developmental neglect, Metema*

5. College of Natural and Computational Sciences, 2013/14

CNCSA1: Regeneration status of Ethiopian monastery forests and their implication for climate change mitigation: The case of Mendaba monastery forest.

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Abstract

Background: Biodiversity has been getting rapid decline since many years due to principally by anthropogenic factors and as a result, large numbers of indigenous and endemic flora and fauna have been lost. In addition, it induces the emission of green house gases into the atmosphere and result in incidence of climate change.

Objectives: This study was intended to investigate: the diversity of woody species; the regeneration status of the forest (seedling, sapling, trees); the frequency and density of the species and the amount of carbon sequestered in the soil of the forest.

Methods: A preliminary survey had been carried out to see the vegetation pattern of the study area and hence sampling sites were selected. 7 transect lines having a length of 1000m and a total of 28 quadrats (with a size of 20 x 20m) were laid down to collect both vegetation and soil samples. Shannon and Wiener diversity index was employed in order to calculate the diversity of the forest.

Result: The result of the study revealed that 69 woody plant species with 33 families and 55 genera were identified. Fabaceae is the most dominant family with 13 species under nine genera. 18 families had been represented by only a single species each. The species diversity of the study area was 3.60 and the total density of woody plant species is 2564.28 and it ranges from 0.89 for *Rhus quartiniana* and 333.92 for *Commiphora schimperi* which was recorded in frequency class A (80-100%) and it is the most frequent species in the study area and occurred in 24 quadrats. 37 species for seedling and 56 species for sapling were recorded with a total density of 669.64/ha

and 1205.36/ha respectively. 12 matured tree species in the study area had not been represented by both seedling and sapling. Even though the study area is characterized by heterogeneous floristic composition and even distribution, its regeneration status is getting interruption by some human induced factors. Soil of the forest had contained a mean of 1.66% of organic carbon which is equivalent to 17.97 ton of carbon per hectare indicating that the monastery had noticeable contribution for mitigation of climate change.

Conclusion: The present study had indicated that Mendaba monastery has harbored diversified plant species and is characterized by more or less successful ecological regeneration process. The occurrence of seedlings and saplings which were the representative of majority tree species actually magnifies the role of monastery in terms of conservation, environmental rehabilitation and maintenance of ecological balances. Besides, Mendaba monastery was playing a significant impact in mitigating climate change by sequestering considerable amount of organic carbon in its soil (1.66%). Thus, the government has to consider such type of forest covered religious institutions in its strategic plan of biodiversity conservation so as to assure sustainable management of biodiversity.

Key words/phrases: Climate change, Diversity, Mendaba monastery, Regeneration.

CNCSA2: rpoB gene polymorphisms and Mycobacterium drug resistant pattern for rifampicin from clinical isolates of TB patients visiting Gondar university teaching hospital

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Abstract

Background: *Mycobacterium Tuberculosis (TB)* is the leading cause of death in the world from a bacterial infectious disease. Despite the use of effective chemotherapy in the past years, drug-resistant TB is increasingly a worldwide problem since the introduction of chemotherapy, and has not been addressed adequately. Multidrug-resistant tuberculosis is a form of drug resistant TB in which TB bacteria can no longer killed by at least two best antibiotics, isoniazid and

rifampicin (RIF) . After dramatic outbreaks of MDR-TB, drug resistance became recognized as a global problem. Drug resistance, using microbiologic definition, is present when more than 1% of the colonies are resistant to a specific drug. Rifampicin is one of the most important chemotherapeutic agents that used to treat TB infection. The mechanism of action of the drug is to inhibit mycobacterium transcription, targeting DNA-dependent RNA polymerase. Resistance to RIF is caused by mutations in the gene *rpoB* that codes RNA polymcrase on β -subunit, determinant of RIF resistance (codons 507-533).

Method: Ninety two sputum (46 each for smear positive and negative) samples clinically confirmed of TB were collected. The samples were stored at -20°C until processing. DNA was extracted from the bacilli by standardized phenol chlorophorm method. The DNA purity was detected using spectrophotometer absorption rates of A260/ A280. DNA was amplified using appropriate primers that amplify 81 bp hot spot region of *rpoB* gene by PCR (polymerase chain reaction).

Result: In this study *rpoB* mutation in the hot spot region(511-533 codons) were detected in 32 out of 46 (69.6%) smear positive MDR-TB sample and 5 out of 46 smear negative MDR-TB samples. On the other hand, no mutation was detected in smear positive susceptible counter parts. The TB patients' prior anti TB treatment history, HIV and drug misuse were found significant risk factors for drug resistance development ($p<0.05$). The detection of mutations at 511-533 codons by PCR in 69.6% MDR-TB patients indicated that most of drug resistance development is due to mutation at this position and the high prevalence of mutant *rpoB* allele.

Conclusion: In the present study 69.6% smear positive samples showed *rpoB* mutated gene. However, to use this mutation as a molecular marker for MDR other studies with larger sample size in the same geographical area and other parts of the country are warranted.

Key words: Isoniazid; MDR-TB; *Mycobacterium Tuberculosis*; Rifampicin; *rpoB*

CNCSA3: Amharic Document Image Retrieval System

(TilahunYeshambel, Email: tilyes2000@gmail.com, Department of Information technology)

Abstract

Background: The advent of modern computers play important roles in processing and managing electronic information that are found in the form of texts, images, audios and videos, etc. With the rapid development of computer technology, digital documents have become popular options

for storage, accessing and transmission. With the need of current fast evolving digital libraries, an increasing amount of historical documents, newspaper, books, etc. are being digitized into an electronic format for easy archival and dissemination purposes. Optical Character Recognition (OCR) and Document Image Retrieval (DIR), as part of information retrieval paradigm, are the two means of accessing document images that received attention among the IR community. Amharic is the official language of Ethiopia since 19th century and as a result so many religious and government documents are written in Amharic. It is observed that accessing those documents has become more and more difficult. To address this problem, very few number of research works have been attempted recently by using OCR and DIR methods. The aim of this research is to develop a system model that enables users to find relevant Amharic document images from a corpus of digitized documents in an easy, accurate, fast and efficient manner. So this work presents the architecture of Amharic DIR which allows users to search scanned Amharic documents without the need of OCR.

Methods: More than 700 Amharic machine printed documents are scanned and stored in document corpuses. On the other hand, around 40,000 Amharic word from various wordtypes have been selected using Amharic experts. Then, the proposed system has been tested through the huge collection of documents. The proposed model is designed after making detailed analysis of the specific nature of Amharic language. The system has been implemented using java, VB and MATLAB programming language. Recalling and Precision are used to test system performance. In this work a model for searching Amharic document images is proposed and word image features are systematically extracted for automatically indexing, retrieving and ranking of document images stored in a database. A new approach that applies one of the NLP tools which is Amharic word generator is incorporated in the proposed system model. By providing a given Amharic root word to this Amharic specific surface word synthesizer, a number of possible surface words are produced. Then, the descriptions of these surface word images are used for indexing and searching purposes. On the other hand the system passes through various phases such as noise removal, binarization, text line and word boundary identification, word segmentation and resizing to normalize different font types, sizes and styles, feature extraction and finally matching query word image against document word images. The proposed method was tested on different real world Amharic documents from different sources like magazines, textbooks and newspapers with various font styles, types and sizes. Precision-recall

measures of evaluation had been conducted for sample queries on sample document images and promising results have been achieved.

Results: The proposed system architecture has been implemented and tested using different programming language. The numbers of features are exactly the same as width of a word image. Using this feature the similarity between two identical word images is greater than or equal to 0.90. Upper and lower word profiles are the upper and lower word shape descriptors, respectively. Like vertical projection, the numbers of feature values is the same as word width. The similarity between two identical word images is greater than or equal to 0.83 for upper bound profile and 0.86 for lower bound profile.

Conclusion: Document images have become a popular information sources in our modern society. Due to that information retrieval from document images database is one of the important research areas in managing document images. Amharic Document Image Retrieval System has been developed by using Natural Language Processing concepts without character recognition. Experimental results show that the proposed strategies achieve a promising performance for searching relevant documents.

CNCSA4: Epidemiological study on the status of schistosomiasis mansoni infection among school children and Biomphalaria snail distribution and trematode infection level in Koladuba Town, Dembia, north Gondar, northwest Ethiopia

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Abstract

BACKGROUND: Schistosomiasis is one of the chronic and neglected tropical diseases affecting rural communities. Heavy infections contribute to anemia and can retard children's growth, physical activity and cognitive function. Due to environmental factors and human activities there are reports on new transmission foci in Ethiopia.

Objective: The general objective of the current study was to determine the epidemiology of schistosomiasis mansoni transmission in Koladuba town, north Gondar zone, northwest Ethiopia.

Materials & Methods: Sizable fresh stool was collected from Three hundred eighty five school children at Koladuba elementary school whose age range from 6-20⁶ years of both sex and processed using Kato-Katz method. Malacological survey was also conducted in Dirma River and 19 *Biomphalaria pfeifferi* were collected from where there is human-water contact.

Result: Out of the total 385 study subjects 82 (21.3%) were found *Schistosoma mansoni* positive with light, moderate and heavy intensity of infection at a frequency of 13.5, 6.5 and 1.3%, respectively. Among the 19 snails collected 2 of them were found shedding *S. mansoni* cercaria.

Conclusion: Although the life cycle of the schistosome parasite was not maintained in laboratory bred animals, the recovery of *Schistosoma mansoni* cercaria from vector snails and the presence of schistosomiasis positive school children among the indigenous community indicates that, *Schistosoma mansoni* is endemic in Koladuba Town. However, continuous investigation is recommended among the communities and in nearby villages.

Keywords: *Schistosomiasis mansoni*; new foci; Koladuba; Ethiopia

CNCSA5: Antibacterial Activity of *Croton Macrostachyus* against Some Selected Pathogenic Bacteria

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Abstract

Introduction: *Croton macrostachyus* is a multipurpose plant that has been used for various remedies as constituents of traditional medicine. Up to now the treatment of infectious diseases caused by bacteria is mainly depend on the use of commercial antibiotics. Currently, due to the emergence of multi-drug resistant strains are widely distributed and infectious diseases caused by bacteria unable to treat by the existing drugs. Hence the aim of the present study was to evaluate the antibacterial activity of *C. macrostachyus* extracts.

Methods: Agar well diffusion and broth dilution assay methods against selected pathogenic bacterial strains were employed. The bacterial strains were assessed for antibacterial susceptibility of three different extracts ethanol, methanol and chloroform.

Result: The highest antibacterial inhibition against *S. aureus* (ST) (32.00 ± 1.00 mm) and *S. Flexner* (30.67 ± 0.58) was revealed by chloroform extracts while the least inhibition zone (7.00 ± 1.00 mm) has shown against *E. coli*. The least MICs of Chloroform was 3.75 mg/ml against *S. Flexner*, *S. pneumonia* and *S. aureus* (ST), ethanol 7.5 mg/ml against *S. aureus* (ST) and methanol 15 mg/ml against *S. pneumonia* and *S. aureus* and MBCs of chloroform extract 7.5 mg/ml against *S. pneumonia* and *S. aureus* (ST), ethanol extracts (15 mg/ml) against *S. aureus* (ST) and methanol extract 15 mg/ml against *S. aureus* against were seen.

Conclusion: This study revealed highest antibacterial activity of chloroform extract. It clearly indicates that the crude chloroform extract of *Croton macrostachyus* showed highest antibacterial activity against all studied bacterial strains as compared to the two solvents used in this study. Thus, further study and characterization of active compounds of this chloroform plant extract is required.

Keywords: Croton macrostachyus, Antibacterial activity, MBC and MIC

CNCSA6: Production of petroleum from available cheap biological resources using biotechnological techniques

Berhanu AndualemTsehai and Abuhaye Webeshite Libswork

Abstract

As world's petroleum supplies are becoming constrained, attention has been directed to find out alternative sources of fuels for engines. These fuels run a major part of the transport sector and their demand is increasing steadily, requiring an alternative fuel, which is technically feasible, economically competitive, environmentally acceptable, and readily available. Cheap raw materials of biological substances in origin are available and sustainable substrates for production of petroleum using biotechnological bioreactor techniques. The main objective of this invention is to produce petroleum from available cheap biological substances through the application of new biotechnological techniques. Different types of biological organic substances were processed into fine separately or in mixture form to create conducive environment for petroleum production process. Bioreactor was designed and constructed using environmental substances. Surprisingly, from three part of substrate, a maximum of 2.3 part of petroleum was produced in volume. The result of this invention is significant to open new market for producers

and also creates job opportunity for the society thereby contributing a lot for economic development of all nations as well as can solve the finite nature of fossil petroleum.

CNCSA7: Production of bioethanol from waste potato peel collected from University of Gondar, student's cafeteria'

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Abstract

Ethanol is one of the bio-energy sources with high efficiency and low environmental impact. Various raw materials such as agricultural crops, industrial and domestic wastes can be used as carbon source for ethanol production. In the present study, potato peel waste discarded from University of Gondar, student Cafeteria was chosen as a sole carbon source for ethanol production using microbial liquefaction, saccharification and fermentation with sequential and co-culture techniques. *Aspergillus niger* and *Bacillus* was used for hydrolysis while *Saccharomyces cerevisiae* of bakery and brewery yeast were used for fermentation of potato peel flour with 87% moisture content. The maximum crude supernatant (380mL) was obtained for sequential culture of *bacillus* with bakery yeast whilst the minimum (74mL) was obtained from *A. niger* and brewery yeast. After distillation of 150mL of broth, the maximum ethanol distillate was obtained from sequential culture of *A. niger* and bakery yeast without autoclaving while the minimum was from *bacillus* and Brewery yeast. The ethanol concentration is maximum for autoclaved and non autoclaved sequential culture of *A. niger* and bakery yeast (42.5% and 41.3 % v/v respectively). The minimum concentration of ethanol (25.5) was obtained from co-culture of *A. niger* and brewery yeast followed by *bacillus* and brewery yeast (27% v/v). The standardized pure ethanol expected in mL was maximum for non autoclaved sequential culture of *A. niger* and bakery yeast (12mL) followed by autoclaved one (11.9mL). From this study, the use of sequential culture of *A. niger* and bakery yeast is far better than the other combination used interms of quantity of bioethanol.

Key words: *Aspergillus niger*, bakery and brewery yeast, bioethanol, potato peel,

Saccharomyces cerevisia,

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CNCSA8: Isolation and characterization of efficient cellulolytic fungi from degraded wood and industrial samples'

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Abstract

Cellulose is the most abundant biopolymer renewable natural product in the biosphere. Cellulose degrading fungal strains play an important role in recycling of cellulosic materials. They have immense advantage in various industries to hydrolyze cellulosic substrates for production of various products. This study was thus aimed to isolate and characterize very efficient cellulose degrading fungi from their common natural habitats. Degraded *acacia* tree samples and industrial water effluents were used for isolation and screening. Both samples were serially diluted and cultured on Cellulose Basal Medium (CBM) supplemented with 30mg/L chloramphenicol as bactericide agents. Cellulose degrading fungal isolates were selected based on their hydrolyze zone after congo red dye stain. Among 13 initial isolates, four isolates (C, E, G, and H) were finally screened as best efficient fungal isolates representing only degraded *acacia* tree using CMB after five days of incubation. After morphological and microscopic examination, the isolates were confirmed as *Penicillium species* (C), *Apergillus terrus* (G), *Alternaria species* (H). Though isolate 'E' morphologically seems *Aspergillus niger*, there was no strong evidence from microscopic data. Out of these isolates, the maximum zone of hydrolysis (51.33mm) was obtained for 'isolate E' whilst, the minimum zone of clearance (26.67mm) was recorded for *penicillium species* and *Aspergillus terrus*.

Key words: Cellulose, Cellulosic Basal medium, congored, fungi, zone of hydrolysis

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***CNCSA9: Data Mining on the Amhara National Regional State of Sectors
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Abstract

Data mining is an application-oriented analytic procedure, which is designed to explore a large amount of data, typically arising out of the context of business, market, insurance claims, weather conditions, scientific research and many more, with an objective of identifying consistent patterns in the data sets, determining systematic relationships among the variables involved so that the findings can be validated by applying the observed patterns to the new subsets of data. "Data Mining is a process of torturing the data until they confess". It is based on the conceptual principles of statistics including the traditional exploratory data analysis (EDA) tools, data modelling, the process of generating data, relevant software packages etc. EDA is concerned with finding the basic character of the phenomenon generating the data and discovering the specific relations among the involved variables. Revealing the characteristics of the underlying functions or the specific types of multivariate dependencies that exist among the variables are the foremost aim of EDA. Main purpose of data mining is to find a solution that can be useful for predictions, which is efficiently done using EDA. In this paper we will discuss various EDA techniques and see how they help analyze data set of Amhara Regional sector. We were able to cluster the regional Zones performance levels in to three by using the techniques of

cluster and factor analysis based on the main activities the four sectors. On the basis of issues relevant to a particular data set as well as other practical considerations, it is necessary to select appropriate tools to apply from the EDA tool box for the purpose of resolving the issues.

6. Faculty of Veterinary Medicine, 2013/14

FVMA1: Molecular Epidemiological Analysis of Newcastle Disease Viruses Isolated From Rural Poultry in Northwest Ethiopia

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Abstract

Background: Newcastle disease (ND) is a highly contagious and fatal disease that affects many species of birds. Although vaccination using live and killed vaccines is widespread as management practice, the virulent strains are endemic in many countries of the world and are responsible for direct and indirect economic losses to the poultry sector. In Ethiopia, ND is rated as the most devastating disease of poultry and outbreaks have been regularly reported on the whole country both in commercial and rural poultry.

Objective: The objectives of the study were to characterize the genotype and pathotype of field strains of ND viruses circulating in rural chickens in northwest Ethiopia and to determine the phylogenetic and epidemiologic relationships.

Methods: Virological and biological tests were initially performed on 240 cloacal and tracheal swabs collected from rural chickens in northwest Ethiopia during November 2011 to July 2012. Then 15 ND virus isolates were molecularly characterized after amplification of the main functional region of the fusion protein (260 nucleotides of the F gene) by real time reverse transcription-poly chain reaction (rRT-PCR). The PCR products were subjected for nucleotide

sequencing and phylogenetic analysis was then performed by comparing with representative reported NDV sequences available in GenBank using MEGA 4.0 software package.

Results: Among the ND virus isolates, 2 isolates were virulent with the multi-basic amino acid sequence of ¹¹²R-R-Q-K-R-F¹¹⁷ while 13 isolates were lentogenic with the mono-basic amino acid sequence of ¹¹²G-G/R-Q-G-R-I¹¹⁷ at the cleavage site of fusion protein. Phylogenetic analysis based on the hypervariable region of the F gene revealed that the virulent isolates were belonged to lineage 5 (genotype VII) and clustered with Sudanese and Egyptian isolates indicating epidemiological link of ND outbreaks between neighbouring countries. The lentogenic isolates were grouped into lineage 2 (genotype II) and shared similarity with La Sota-like strains originated either directly from vaccine or infectious virus mutated from vaccine strain and circulating in rural poultry.

Conclusion:- This study provided evidence on the existence of at least three different NDV genotypes circulating in the rural poultry in Ethiopia. The circulation of distinct virulent genotypes (genotype VI and VII) complicates the epidemiology of ND in Ethiopia, and it should be taken into account when vaccines are used and vaccination trials are to be designed. The virulent NDV may continue to be a problem in poultry sector in Ethiopia as the virulent genotypes identified are among the predominant viruses responsible for ND outbreak in poultry worldwide. Therefore, strict ND vaccination programs and biosecurity measures are mandatory in Ethiopian commercial and rural poultry to prevent economic losses associated with outbreaks. The close phylogenetic relationship between the virulent NDV isolates of Ethiopia and neighbouring countries warrants continued surveillance of commercial and non-commercial poultry for early detection of virulent ND viruses.

Keywords: Newcastle disease virus; pathotyping; phylogenetic analysis; rural poultry

FVMA2: Burden, Trends and Treatment Outcomes of Tuberculosis Cases in Bahir Dar, Northwest Ethiopia: A Four Year Retrospective Study

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Abstract

Background: Tuberculosis (TB) continues to be a major global health problem. Although pulmonary TB (PTB) accounts for the majority of the cases and the main transmissible form of the disease, extrapulmonary TB (EPTB) also contributes to the burden of disease.

Objectives: This study described the burden and trends of tuberculosis (TB) and evaluated the treatment outcomes of TB patients.

Methods: The study design was retrospective document review of TB patients enrolled from 2009 to 2012. Information was obtained from registration book of Direct Observation Treatment, Short Course (DOTS) clinics at Felege Hiwot Referral and GAMBY General Hospital in Bahir Dar, northwest Ethiopia. A total of 2569 TB cases were considered for descriptive analysis but only 892 included in the treatment outcome evaluation. Logistic regression model was used to investigate the association between potential predictor variables and the treatment outcomes of TB patients.

Results: Among 2569 TB cases 1212 (47.2%) were pulmonary TB (PTB) and 1357 (52.8%) extrapulmonary TB (EPTB). Of 892 TB patients evaluated for treatment outcome 84.30% was successfully treated, 4.60% defaulted, 10.65% died and 0.45% treatment failure. The odds of successful treatment was smaller among female (Adjusted odds ratio=0.66, 95% CI: 0.45-0.98), elderly ≥ 40 years of age (0.38, 0.20-0.72), HIV reactors (0.26, 0.17-0.39) and TB patients enrolled in 2012 (0.39, 0.23-0.69) compared to their respective comparison groups. Elderly ≥ 40 years of age (3.53, 1.19-10.49) and HIV sero-positivity (6.21, 3.79-10.172) were identified risk factors for higher default and death rates, respectively. Patients enrolled in 2012 were 2.42 and 2.54 times at risk to default and died compared to those registered in 2009. In conclusion the proportion EPTB was high and increasing as total TB and PTB decreasing.

Conclusion: The overall treatment success rate in the study area was satisfactory even though it was decreasing across the years while default and death rates were increased. The identified problems can impose major obstacles in the control of TB in the study area. Therefore they need to be further investigated and intervened urgently.

Keywords: Extrapulmonary, Pulmonary, Treatment outcome, Tuberculosis

FVMA3: Prevalence and Antimicrobial Susceptibility Pattern of Listeria Species from Ready-to-Eat Foods of Animal Origin in Gondar Town, Ethiopia.

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Abstract

Introduction: Listeriosis, mostly caused by *Listeria monocytogenes*, has become a major concern to public health authorities due to its clinical severity and high mortality rate, particularly in high risk groups. Currently, there is limited information regarding the prevalence and antimicrobial susceptibility profiles of *Listeria* species in ready-to-eat foods of animal origin in Gondar, Ethiopia.

Objectives: The aim of this study was to determine the prevalence and antimicrobial susceptibility pattern of *Listeria* species isolated from ready-to-eat food of animal origin from public dinning places in Gondar town, Ethiopia.

Methods: A cross sectional study was carried out on ready-to-eat foods of animal origin sampled from major supermarkets, butcher shops, pastry shops, restaurants and hotels. Culture, biochemical and sugar tests were conducted for bacterial identification. Antimicrobial susceptibility profiles of the isolates were assessed using disc diffusion test.

Results: Out of the total 384 food samples examined, 96(25%) were positive for *Listeria* species. *Listeria monocytogenes* was detected in 24(6.25%) of the samples. Higher number of *Listeria monocytogenes* was isolated from cake, raw meat, ice cream, minced beef, fish files, unpasteurized milk and pizza in decreasing order. Assessment of antimicrobial profile of *L. monocytogenes* revealed the presence of four multi-drug resistant isolates. The higher resistance rate was recorded for Penicillin, Nalidixic acid, Tetracycline and Chloramphenicol, in decreasing order. All of *L. monocytogenes* identified in the current study were sensitive to Amoxicillin, Cephalothin, Cloxacillin, Sulfamethoxazole, Gentamicin and Vancomycin.

Conclusion: The presence of *L. monocytogenes* in some ready-to-eat food items is an indicator of the presence of public health hazards to the consumer, particularly to the high-risk group of

the community. Circulation of drug resistant and multidrug resistant *L. monocytogenes* in foods of animal origin was evidenced during this study. Hence awareness creation on food safety, regulation of the use of drugs in animals and humans, and implementation of hazard analysis critical control point principle is highly recommended.

Keywords: *Ready-to-eat food, Listeria, Gondar, Restaurants, Antimicrobial Resistance*

FVMA4: Identification of Drug-Resistant Salmonella from Food Handlers at the University of Gondar, Ethiopia.

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Abstract

Background: *Salmonella* species are among the most common food borne pathogens worldwide and their infection is one of the major global public health problems. During the last decade, multidrug-resistant *Salmonella* species have increased to a great deal, especially in developing countries. The prevalence and antimicrobial susceptibility pattern of *Salmonella* isolates among food handlers at the University of Gondar, Ethiopia, were described in the current investigation.

Method: A cross-sectional study was conducted from February to June, 2013 at the University of Gondar. Stool samples from selected volunteer food handlers were collected and analyzed complemented with questionnaire. Standard isolation, identification and biochemical tests were performed to identify *Salmonella* isolates. Antimicrobial susceptibility tests were also carried out on each isolate using Kirby-Bauer disc diffusion method. The data was entered into Epi info version 3.5.4 and analyzed using SPSS version 21.

Result: Out of 423 food handlers participated, 303 (71.6%) were females. Almost two-third (71.4%) of food handlers had no previous medical checkup to *Salmonella* infection and only 24(5.7%) of them were certified as food handlers. Thirteen (3.1%) food handlers were found to be positive for *Salmonella* isolates. The results of antimicrobial susceptibility test in the current research revealed that from a total of 13 isolates; 9(69.2%), 8(61.5%), 6(46.2%) and 6(46.2%) of the isolates were resistant to Amoxicillin, Ampicillin, Nitrofurantoin and Tetracycline,

respectively. In addition, nearly half (46.2%) of the isolates were multidrug-resistant. However, all of them were sensitive for both Ceftriaxone and Gentamycin.

Conclusion: This study indicated that drug resistant including multidrug-resistant *Salmonella* isolates were circulating among food handlers at the University of Gondar. These *Salmonella* positive food handlers pose significant risk of infection to the university community particularly to the student population. It is essential to implement food handlers training on food safety, conduct periodic medical screening and continuous monitoring of food handlers at the study university.

Key words: Antimicrobial Susceptibility, Food handlers, Prevalence, *Salmonella*, Ethiopia

FVMA5: Identification and Antimicrobial Susceptibility Pattern of Staphylococcus Aureus, Salmonella and Shigella Species from Meat and Surface Swabs at the Butchers' Shops in Gondar Town, Northwest Ethiopia

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Abstract

Background: Bacterial genera that commonly infect meat while it is being processed, transported, and consumed include: *Salmonella* spp, *Shigella* spp, *S.aureus* and other coliforms. These food-borne organisms are major causes of deaths, illnesses and expenses costing billions of dollars in medical care and social costs. Food safety problems are becoming an increasingly serious threat to public health both in developed and developing countries. Moreover, antimicrobial resistance among these strains is rapidly increasing.

Objective: The aim of this study was to assess the prevalence and antimicrobial susceptibility pattern of *S.aureus*, *Salmonella* spp and *Shigella* spp from meat and surface swabs at the butchers' houses of Gondar town, Northwest Ethiopia.

Methods: A cross-sectional study was conducted from February 10 up to June 30, 2013 at the butchers' houses of Gondar town. All available raw meat samples and swab samples from selected critical control points of these butchers' houses premises were collected and analyzed using standard methods. Bacteria were identified using colony characteristics, Gram-reaction, biochemical and sugar tests. Antimicrobial susceptibility test was also performed on each isolate

using Kirby-Bauer disc diffusion method. After checking the data for completeness it was entered and analyzed using SPSS version 16.0.

Result: Of 306 samples screened, positive cultures yielded, 5.2 % (16/306) *S. aureus*, 17.3 % (53/306) *Salmonella*, and 10.5 % (32/306) *Shigella* spp. Forty five point five percent (45.5%) of the meat samples and 54.5% of swab samples taken from selected critical control points were contaminated with the above bacterial isolates. *S.aureus* isolates were 56%, 12.5% and 6.3% resistant to oxacillin, gentamycin, and sulfamethaxazole-trimethoprim; respectively and also 37.5% of each isolates were resistant to amoxicillin, tetracycline and vancomycin. *Salmonella* isolates were resistant to ampicillin, amoxicillin, nitrofurantoin, tetracycline, sulfamethaxazole-trimethoprim and ceftriaxone, 88.7%, 62.3%, 35.8%, 32.1%, 30.2%, and 5.7% in that order and 90.6%, 46.9%, 18.8% and 9.4% of *Shigella* isolates were resistant to ampicillin, amoxicillin, ceftriaxone and tetracycline, respectively.

Conclusion: Bacteriological safety of meat sold at butcher's houses of Gondar town was poor indicating that the meat supplied was not hygienically sound for public consumption. From isolates identified, *S. aureus* showed high level of resistance to amoxicillin, oxacillin, tetracycline, bacitracin and clindamycin. Moreover, *Salmonella* and *Shigella* isolates showed high level of resistance to amoxicillin, and ampicillin. This antimicrobial resistant pattern aforementioned is enough to warrant the revision of our treatment regimen for infections implicated by these isolates.

Keywords: *Bacteriological quality, antimicrobial susceptibility, butchers' house, raw meat, Gondar town*

FVMA6: Prevalence and Antimicrobial Resistance of *Salmonella* Isolates From Animal Origin Foods in Gondar Town, Northwest of Ethiopia
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Abstract

Background: Foods of animal origin are considered to be the major sources of foodborne salmonellosis. The emergence of antimicrobial resistant *Salmonella* is associated with the use of antibiotics in animals raised for food. And studies for isolation and identification of *Salmonella*

need to be done to control the spread of the pathogen and infection of man through contaminated animal products.

Objective: The purpose of this study was to assess the prevalence of *Salmonella* and their antimicrobial resistance from animal origin food samples obtained from public catering establishments in Gondar town.

Methods: A cross sectional study was undertaken from February to June 2013 from randomly selected 1388 public caterings in Gondar town. A total of 384 foods of animal origin were purchased. The samples were analyzed for *Salmonella* according to ISO- 6579. Antimicrobial resistance test was also performed by disk diffusion method using 9 antibiotics.

Result: Out of the 384 food items examined, 21(5.5%) were *Salmonella* positive. About 9 (18%) of raw egg, 6(12%) of raw meat, 2(8%) of minced meat, 3(6%) of raw milk, and 1(2.9%) of burger yielded *Salmonella* positive. However, *salmonella* was not detected in pasteurized milk; pizza, egg sandwich; cottage cheese and cream cake. Ten of the 21 isolates (47.6%) were resistant to at least one antimicrobial agent with 38% being resistant to at least two antimicrobials.

Conclusion and Recommendation: This study indicated that *Salmonella* was prevalent in raw eggs, raw meat, raw milk, minced meat and burger. Significant percentages of the isolates have developed resistance for routinely prescribed antimicrobial drugs used in veterinary medicine and public health sectors. Proper cooking of foods, improved personal and foods hygiene and prudent antimicrobial usage should be adopted to ensure the safety of products for human consumption.

Key words: Prevalence, *Salmonella*, antimicrobial resistance, food items, mass catering establishment, Gondar town.

***FVMA7: Assessment on Production and Marketing System of Fish in North Western
Part of Lake Tana, Ethiopia.***

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Abstract

The study area was conducted in the North Western part of Lake Tana, with specifically three commercially fish species (tilapia, catfish and barbus species). The study was focused on the different fishing practice, understanding of the production and marketing system. Three village/landing sites were selected purposively for the survey based on experienced for fishing practice in the past. A total of 95 fishers were interviewed: from each village/landing site ("Delgie 27", "Goregora 35" and "Infranze 33."). The data collection was conducted from October 2012-June 2013. This consists of both form primary and secondary source. A Multi stage random sampling technique was employed covering fishers. Descriptive and statistical package for social sciences (SPSS V-17) was used in analyzing. From sample respondents, 100% were reed boat owners. All sampled fishers from the three fish landing sites were used to catch Nile tilapia (*Oreochromis niloticus*), African catfish (*Clarias gariepinus*) and large barbs (*Labeobarbus* spp.). Fishing, crop production, animal husbandry, petty trade and casual laborer contributed 60%, 21%, 12%, 2% and 5% of fishers' livelihood, respectively. The Regression model estimation showed that distance from fishing ground, educational level, credit supply, fishing trip and gillnet number were the significant determinants of fish production in the area. Fishers, assemblers, retailers, cooperatives, wholesalers, hotels and consumers were the important fish market intermediaries of Lake Tana fishery. Fisheries development interventions should be aimed at addressing both fish production and marketing problems. The study further suggested that fish quality, fish supply, education and training, licensing of the fishers and improving access to services should receive due attention to improve fish marketing and production system.

Keywords: *Fish, Fishers, Lake Tana, Marketing and Production*

FVMA8: Characterization of Overall Reproductive and Lactation Performance of Dairy Cows in Delgi Town and Kebeles at Takusa Woreda of North Gondar Zone of Amhara Regional, Ethiopia

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Abstract

This study was conducted in the Delgi ketema and nearby kebeles at Takusa woreda of north Gondar zone of Amhara regional state from January 2014 – April 2014 with the objectives of to characterize overall reproductive and lactation performances of dairy cows of Delgi ketema and nearby kebeles, and to estimate, age at first calving, calving intervals, lactation yield, daily milk yield, lactation length, and reproductive efficiency of local and crossbred dairy cows. The Participatory Rural Appraisal method was used to generate information during exploratory survey. After taking inventory of all dairying activities, by using random and purposive sampling technique, 100 households was selected for formal survey (multipurpose single survey method), and the selected members were interviewed using standardized questioner. The overall average age at first calving of local and crossbred dairy cows was 45.6 months of which made up 48 months (n=72) for local cows and 43.2 months (n=28) for crossbred dairy cows. The overall average calving interval of both local and crossbred dairy cows was 14.2 months of which made up 15.8 months (n=72) for local dairy cows and 12.58 months (n=28) for crossbred cows. The overall average milk yield per lactation in the Delgi area was 817.2 liters per lactation of which made up 383.01 liters per lactation (n=72) and 1251.1 liters per lactation (n=28) for local and crossbred respectively. In the Delgi ketema and nearby kebeles, considering average lactation length and average lactation yield of local cows, the average estimated daily yield off take from local cows was 1.42 liters per day (n=72). The average estimated daily milk yield of crossbred cows was 2.96 liters per day ((n=28), and lactation length of (n=72) 8.45 months and (n=28) 14.03 months for local and crossbred dairy cows respectively. In conclusion, in the study area intervention measures has to be taken to fill the gaps from the expected to be achieved.

Keywords: *Lactation Performance; Local Crossbred Cows, and Reproductive Performance*

FVMA9: Knowledge, Attitude and Practices Towards Rabies in Rural House Heads of Gondar Zuria Distric, Ethiopia

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Abstract

Background: Rabies is fatal animal disease of significant public health importance. Domestic dogs are the main reservoir and transmitter of this disease particularly in developing countries. Even though rabies is highly fatal disease, it is preventable before and after exposure in humans. Community awareness about rabies is the key component for the prevention.

Methods: A cross sectional study was conducted from March to May, 2013 with the aim of assessing knowledge, attitude and practice of rural community in Gondar Zuria district about rabies. A pre-tested questionnaire was used to collect the data through personal interview. The data was analyzed using descriptive statistics.

Results: The current study indicated that almost all (99.3%) of the surveyed individuals were aware of the disease rabies. Rabies is considered as fatal disease in humans by 68.4% of the respondents and 28.1% believes that it is treatable disease. Dogs were mentioned as source of infection for humans by all respondents followed by equines (27.2%) and cats (12.1%). The most frequently mentioned incubation period for both animals and humans by the respondents was 40 days. Aggression was mentioned as a major clinical signs of rabies in animals. The need for immediate medical care after exposure was mentioned by less than half (47.4%) of the respondents and only 38.8% of the respondents considered modern medicine as appropriate treatment after exposure to rabid animals. Nearly 44% of respondents had experienced dog bite. Following the dog bites only 30.7% practiced washing of the wounds with water as first aid to prevent rabies.

Keywords: *Bites, Clinical signs, Dogs, Fatal, Medical care, Rabies*

FVMA10: Small scale community based breeding program on indigenous dairy cattle in North Gondar, Ethiopia: Phase I: selection of sire and dam

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Abstract

Background: Although the livestock sector has a significant contribution to the national economy, production per animal is extremely low. The demand for animal products is increase substantially with static production potential of indigenous breeds. To meet the ever-increasing demand for milk and milk products and thus contribute to economic growth, genetic improvement of the indigenous cattle has been proposed as one of the options. Genetic improvement of the indigenous cattle, basically focusing on importing improved commercial breeds and crossbred with the indigenous, but in most cases, it is done without sufficient pretesting of the appropriateness (suitability and adaptability) (Aynalem et al. 2014). As a result their productivity at community level is not visible. Therefore, selection and improving indigenous breed has been taken as biggest opportunity.

Objective: To enhance milk productivity of indigenous dairy cattle breeds

Methods: Selection of the best sires and dams with in indigenous breeds for community based indigenous dairy cattle improvement breeding program in north Gondar was conducted from February to May 2014 with the main objective of enhancing milk productivity of indigenous dairy cattle breeds. First rapid field survey was conducted throughout the study area. Then focus group discussion (contains 10-15 personal) on the selected breed was held. Interviewing the selected respondents and subjecting individual cattle's in dairy cattle judgment were conducted. Finally, pedigree history and 10 days successive milk products of individual cattle were measured. data's from focus group discussion were compile and presented on each topics. Questionnaire data's were imported to descriptive statistics of SAS 2002 (SAS, 2002) for mean and frequency count. Further more productive data's were imported to SAS 2002 for ranking.

Result and conclusion: The two breeds have distinct morphological feature, production environment and agro-climatic zones. Even if there is slight difference on dairy characters between two breeds, their production potential is almost the same. Here within, the best 10 dams/breed those can produce more than 3 liter of milk/day, having one year calving interval.

zero abortion rate, less than three year age of giving first birth and more than seven month lactation length were selected. Furthermore, the top three sires/breed those can have a potential of producing more than 3.5 litter of milk/day, less than three year first birth, high sister milk productivity and least calving interval were selected. Generally, 20dams/breed those can produce more than 3 litter of milk/day and six sires/breed those have a potential of giving more than 3.5 litter of milk/day were selected.

FVMA11: Gastrointestinal parasites: A threat to small ruminants at the wildlife-livestock interface of Simen Mountains National Park (SMNP)
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Abstract

Background: Knowledge of the extent to which cross-infection occurs between domestic and wild ruminants is important in the formulation of helminths control programs in areas where the various species coexist. The present study was conducted on the prevalence of the infections caused by gastrointestinal parasites in grazing sheep and goats at the wildlife-livestock interface of Simen Mountains National Park (SMNP) northwestern Ethiopia in which one of the game species, the Walia ibex (*Capra walie*), commonly shares grazing with sheep and goats.

Objectives: the aim of the present study was to determine the prevalence and species of GI parasites in local breeds of sheep and goats at wildlife-livestock interface of Simen Mountains National Park.

Methods: A cross-sectional study was conducted to analyze faecal samples from 131 flocks (91 sheep, 40 goats) located at wildlife-livestock interface of Simen Mountains National Park using standard coprological procedures.

Results: The overall prevalence of gastrointestinal parasite infection was 97.7%. The nematodes were the predominantly occurring (85.15%) helminths parasites followed by cestodes (25.78%) and trematodes (5.46%). The nematode parasites encountered were *Strongyles* (78.12%), *Nematodirus* spp. (14.06%), *Trichuris* spp. (15.62%), *Toxocara* spp. (10.15%), *Dictyocaulus* spp. (18.75%) and *Muellerius* spp. (2.34%). Species of trematode and cestode parasites observed were *Fasciola* spp. (5.46%) and *Moniezia* spp. (25.78%), respectively. The coccidian oocyst

recorded was that of *Eimeria* spp. (74.21%). The pattern of infection was either single (17.96%) or mixed (82.03).

Conclusion: The host range of many of the helminths found in small ruminants in the study area is broad and could serve as a potentially stable source of infection to wild ruminants such as Waia ibex. So, it requires to design the appropriate worm control strategies.

Key words: Gastrointestinal parasites, Sheep, Goats, Prevalence, SMNP

FVMA12: Study on Surveillance, Investigation, Diagnosis, Prevention and Control Options of Major Neglected Zoonotic Diseases in Northwest Ethiopia Using: One health as a tool (1)

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Abstract

Background: Successful adoption of a One Health approach could have far-reaching impacts on poverty alleviation, health and food security, particularly in developing countries like Ethiopia through integrated control of neglected zoonoses. However, the practical implementation of this approach presents many challenges. Different authors argue that, for effective implementation, lessons learned and 'best practice' must be led by national and regional stakeholders drawn from a variety of disciplines. High-profile regional and international institutions can play an important role in the global governance of One Health by encouraging individual countries to devise appropriate tailored solutions that are workable within their own context.

Objectives: Conduct, maintain and report inventories of control activities and one health tools for neglected zoonotic diseases and use evidence-based advocacy to leverage resources and commitment for control from the national and regional health ministers/bureau and promote

advocacy efforts to inform about the societal burden of Neglected zoonotic diseases thereby to create demand for their control.

Materials and methods: A cross sectional study was conducted from September, 2013 to May, 2014. The study sites were four zones in the northwestern Ethiopia namely, North Gondar, South Gondar, west and east Gojam zones. From each zone; districts were selected purposely followed by random selection of hospitals, veterinary clinics, health centers, regional diagnostic laboratories and centers. Cross sectional inventories were made using structured questionnaires, interviews and visits to practical sites of one health model sites and consultative meeting of health professionals from different disciplines (medical, veterinary and environmental health profession). Retrospective data were collected from regional offices. Data were then entered into the Microsoft excel and then analyzed with SPSS soft ware version 17.0. Other descriptive statistics were used in presenting the result in tables and figures.

Results: From 1600 respondents rabies, leishmaniasis, bovine tuberculosis, brucellosis, cysticercosis, echinococcosis, leptospirosis and toxoplasmosis had received recognitions in their occurrence in the study sites in their order of importance. Rabies alone (5.25%), rabies and bovine tuberculosis (19.94%) rabies and bovine tuberculosis and leishmaniasis (20.19%) and rabies and leishmaniasis (27%) were put most important by the professionals of health in increasing order. Sheep, goats and equines were seen to be equally affected by the neglected zoonotic diseases. While man and animals together account 78.75%. Most of the respondents (81.25) didn't know about one health while 56.375% of them do not usually work out of their professional expertise. Yet, after the consultative meeting and discussions they have been convinced and most of them (68.81%) agreed that prevention and control of neglected zoonotic diseases would be effective using one health approaches. The diagnosis of neglected zoonotic diseases is carried out as usual as other common diseases of man and animals in their own respective health centers and laboratories. However, most of the diagnosis was done referred to national laboratories (34.18%) and or regional laboratories (9.19%). One of the critically important problems to implement one health however is lack of national coordinating implementing system to one health.

Conclusions: One health has a general aim of improving health and well-being through the prevention of risks and the mitigation of effects of crises that originate at the interface between

humans, animals and their various environments. One Health is more of an approach than a new concept. It is rapidly becoming an international movement based on cross-sectoral collaborations. The concept is that collaboration will advance health care by accelerating biomedical research discoveries, enhancing public health efficacy, expanding the scientific knowledge base, and improving medical education and clinical care for the purpose of protecting and saving lives in our present and future generations. However, from the findings we could draw a conclusion that the collaboration between veterinary, medical and environmental health in Ethiopia is absent. Thus it requires acceleration of biomedical advances by integrating environmental, veterinary, and human medical science in understanding the development and transmission of infectious diseases. Promotion and collaboration activities are basic to meet the goals and mission of one health.

Key words: One Health, Neglected Zoonoses, Tool, Promotion, Surveillance, West Amhara

FVMA13: A Study on the Prevalence and Identification of Major Ixodid Tick Parasites of Cattle in Dembia District, North Gondar Zone, North West Ethiopia

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Abstract

Background: Ticks are serious vectors of human and animal disease agents; transmitting a greater variety of infectious organisms than any other blood-sucking arthropods. Ticks are known to transmit numerous protozoans, viral, bacterial and fungal pathogens. Ticks are injurious to domestic livestock and wildlife due to the blood loss that can occur when a large number of ticks feed on them. Secondary infections can occur at the feeding sites and diminish the value of livestock from the damage to the hides. Ticks are especially important to domestic animals in tropical and subtropical countries. Here the warm climate enables many species of ticks to flourish. In Ethiopia ticks are found distributed widely and they are causing tremendous losses in hide downgrading, loss production and transmission of diseases.

Objectives: To assess the prevalence of major ixodid tick parasites on cattle, identify the prevalent ticks to the genera and species level and recommend suggestions based on the result of the study.

Material and Methods: A cross-sectional study was conducted in Dembia district, North Gondar zone, from November, 2013 to April, 2014 to investigate the distribution and abundance of ticks in cattle and the species composition. Study animals were selected randomly from the clinic. Adult ticks of 1451 were collected from 384 local and cross-breed cattle manually using forceps. To collect data on risk factors and animal anamnesis, questionnaires, interviews and laboratory investigation were carried out.

Results: Out of the total of 384 cattle examined, 312(81.25%) were found to be infested by one or more tick parasites. About 1451 adult ticks were collected from the animal body parts and were identified to genera and species level. Eight tick species of four genera were identified. From the total ticks collected *Boophilus*, *Amblyomma*, *Hyalomma* and *Rhipicephalus* account 40.86, 20.74, 20.34 and 18.06 % respectively. The relative prevalence of each species was *Boophilus decoloratus* (40.86%), *Rhipicephalus evertsi evertsi* (11.51%), *Amblyomma varigatum* (13.64%), *A. cohaerense* (5.21%), *A. lepidum* (1.92%), *R. simus* (6.54%), *Hyalomma marginatum* (12.96%) and *Hyalomma truncatum* (7.36%). The risk factors breed, sex and age of cattle did not show any statistical significant association with the infestation rate but there was statistical significant association of infestation rate with the body conditions of animals. The prevalence of tick infestation was found highest in poor body condition (98%) while in medium body condition it was (76.11%) and in good body condition it was found 74.04%. It has also been evident that the favorable predilection sites of *Amblyomma* species were ventral body parts and perineum region. *B. decoloratus* preferred dewlap, udder/scrotum, belly, leg, head, and perineum. *Rhipicephalus* species had a strong affinity for perineum, dewlap, udder/scrotum, tail tips and ears. For *Hyalomma* species the perineum region, udder/scrotum and under tail were its hiding sites.

Conclusion: Ticks of the four general namely *Amblyomma*, *Boophilus*, *Hyalomma* and *Rhipicephalus* were common in the study area. From these genera eight species were identified. Thus prevention and control strategies should be implemented the burden.

Recommendations: Further studies should be carried out on tick burden and tick born diseases to pave the way for their prevention and control. Risk factors which could facilitate the infestation of cattle by ticks would also be given attention.

Key words: Cattle, Dembia District, Prevalence, Tick.

FVMA14: Occurrence of Wound and Associated Risk Factors in Working Donkeys of Yilmana Densa District, Northwest Ethiopia

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Abstract

Background: The basic nature of donkeys seems to put them at risk for traumatic injuries. One of the most common reasons that clients present their donkeys to the clinics is trauma that results in skin and soft tissue wounds. Most often wounds occur on donkeys back and are caused by loads, harness or bit and building materials. Wounds on the back of donkeys can be especially difficult to manage because of its large size, old wounds, poor circulation, and minimal soft tissue between skin and bone.

Objectives: determine prevalence of wound in working donkeys in Adet town and surrounding kebeles of Yilmana Densa district and to assess risk factors associated with wound in working donkeys.

Materials and Methods: Across sectional study was conducted from October 2013 to April 2014 on randomly selected working donkeys to determine prevalence of wound in Adet town (Administration town of Yilmana-Densa district) and its surroundings kebeles. The study animals were selected randomly. The risk factors sex, age, body condition scores, condition of saddle, working nature and type of load carried were assessed through anamnesis and physical clinical examination of animals. A total of 410 working donkeys were examined.

Results: The overall prevalence of wound was 42.2%. The occurrence didn't vary significantly among sex of the animal ($p>0.05$). However, the occurrence of wound vary significantly among age categories ($\chi^2= 6.522$, $P < 0.05$). Higher prevalence was noticed in old animals (46.3%) than adults (42.2%), and young ones (22.9%). The body condition scoring was found to be significantly associated with wound prevalence where donkeys with poor body condition were twice at risk of developing wound (44.8%, $\chi^2= 4.144$, $OR= 1.67$, $CI=1.016-2.770$) than those having good body condition (32.6%) ($p<0.05$). In terms of working nature the present study showed that, donkeys usually transporting a pack weighing more than 80kgs were with

appreciably higher prevalence of wound (50%, $\chi^2 = 12.126$, $P < 0.05$) than those donkeys usually transporting a pack weighing less. Similarly, donkeys working for more than 4kms per single trip were with notably higher prevalence of wound (45.8%, $\chi^2 = 17.264$, $P < 0.001$) than those usually working for nearer distances (<4kms). In addition, donkeys used to carry construction material (cement, metals and sand) were with significantly higher prevalence of wound (66.7% $F = 12.786$; $p < 0.05$) than those donkeys used to carry wood (16.7 %). Condition of saddling or padding also considerably high prevalence of back sore ($\chi^2 = 5.621$, $p < 0.05$). Those donkeys working with insufficient or without any saddle were almost twice at a greater risk of having back sore (26.9%, OR= 1.842, 95%CI=1.107-3.066) than those with proper saddle (16.7%). However, positive wound cases (79.25%) haven't received wound treatments but were seen with traditional wound management system of the society.

Conclusion and recommendations: Generally, this study has clearly figured out wound as a major health problem of working donkeys in Adet town and surrounding kebeles. And hence, a comprehensive donkey health programs should be implemented in order to alleviate the current prevailing problem. These results allow recommendations to be made to owners of equids that may decrease the prevalence of wounds and, therefore, improve welfare and working capability of these animals. Research is required to identify reasons why animal owners did not care for their animals and there exists regional and zonal differences in the prevalence of pack wounds in donkeys.

Key word: Adet, Donkeys, Ethiopia, Prevalence, Risk factors, Wound.

FVMA15: A study on Infertility of Dairy Cows in four Selected Districts of North Gondar

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Abstract

Background: Ethiopia holds large potential for dairy development due to its large livestock population, the favorable climate for improved, high-yielding animal breeds, and the relatively disease-free environment for livestock. Given the considerable potential for smallholder income and employment generation from high-value dairy products, development of the dairy sector in Ethiopia can contribute significantly to poverty alleviation and nutrition in the country. Ethiopia has the largest cattle population in Africa at 52 million, including 10.5 million dairy cattle, placing the country in the top eight livestock-producing countries in the world. Cattle are considered as infertile when they are neither normally fertile nor completely sterile.

Objectives: Determine the prevalence of infertility in dairy cattle, investigate the causes of infertility in dairy cattle, determine the economic impact of infertility on dairy cattle and investigate the possible risk factors of infertility.

Materials and methods: Cross-sectional study will be deployed to study. Cases of infertility will be selected purposively and samples from them will be taken microbiology, and pathological investigations. Some prospective studies will be conducted for cases in Gondar and Gondar Zuria districts that are very accessible to the working site. Records will be made on history of diseases, clinical signs and morbidity and mortality rates if any. Questionnaire and interview will be conducted to the farm attendants to register on the risk factors that predispose dairy cows to infertility problems. The study will be carried out on indigenous, cross breed and pure exotic breeds of small, medium and large scale dairy farms in and around Gondar. Farms will be selected randomly. Then sampling for laboratory and other physical clinical examination will be purposive selection. The sample size will be 384 setting 50% expected prevalence of diseases by Thursfield 2005. The data will be entered in Excel spreadsheet. Descriptive statistics will also be used. The data will be analyzed using stata and SPSS Microsoft. Percentages mean and standard deviations will be used to describe the result. Charts, graphs, figures and tables will be used to present the result.

Result: In this study 384 dairy cows have been assessed. Among these 180 were indigenous breed cows and 204 were Holstein Friesian cross breeds. The prevalence of infertility was 6.77 % but in terms of breed 7.22% and 6.37% affected respectively. According to service used prevalence of infertility problem was 10.38%, 4.14% and 0.49% for AI, Bull and both

respectively. By body condition infertility in well fattened 13.04%, medium 5.9% and poor 6.26 %. With parity prevalence of infertility was heifer 9.5%, 1st calving 5.5%, 2nd calving 4.5%, 3rd calving 3.4%, 4th calving 7.5%, 5th calving 9.5%, and 6th calving 25%. The study showed that the highest prevalence of infertility was seen among the local breeds, AI service, well fattened cows and in those cows with parity increment. In all the results and associated risk factors it was found statistically significant.

Conclusion: This study provided certain risk factors paving infertility problems in North Gondar. The prevalence of infertility in North Gondar is currently 6.77 % but this is doesn't mean it involves all infertile cows because slaughtering for beef purpose prior to diagnosis is practiced. Most of the infertility problems are not sterile; rather they suffer from lowered fertility and the infertility problems which reduce the productivity and economic efficiency of dairy cattle.

Recommendation: Disease free bull should be used in parallel to AI service as option to increase conception rate. Presence of teaser bull is mandatory to overcome the problem of silent heat. Cows at 6th calving and aged ones should be culled and used for salvage products. Infertile heifers before culling should be given extra time until their reproductive organ is well developed. Capacity building training is essential for AI technicians in diploma level since they have limited knowledge of anatomy, physiology and reproductive diseases and similarly, heat detection short term training for dairy cow owners will increase productivity. Develop the habit of proper pregnancy diagnosis as routine activity before going to inseminate any cow in estrus phase because sometimes pregnant cows come to heat due to high estrogen hormone production in the body. AI equipments should be kept clean and sterile. Good management and nutrition for cows should be given emphasis. Encouraging dairy owners to take infertile cows to veterinary clinic. Hormonal treatment has to be practiced for follicular cyst and luteal cysts.

Keywords: Breed, Dairy cows, Infertility, AI, Bull, Parity, North Gondar

7. Faculty of Agriculture, 2013/14

FOAAI: Evaluating Impact of Physical Soil and Water Conservation Structure on Same Selected Soil Physicochemical properties in Gondar Zurya Woreda
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Abstract

Soil degradation is one of the crucial issues in mountainous areas of Ethiopia which needs serious attention to mitigate it. Different soil and water conservation intervention were introduced in the country during last decades. However, the performance of structures against the target has not been studied. The study was conducted in Ambacharawatershed, in north Ethiopia and opted to evaluate effect of these structures in alleviating problem of soil erosion and analyze its effect on selected soil properties when compared with non-terraced cropland. Stone faced soil bunds (SFSB) and stone bunds (SB) have been widely implemented in the study area by supportgtz since 1994. Household survey, focus group discussions and field observations were also conducted to assess farmers' perceptions on the impact of soil and water conservation structures (SWC) on soil degradation. Cultivated fields treated by stone faced soil bunds (SFSB) and stone bunds (SB) structures were compared with non-conserved cultivated land (control) and evaluated under three slope gradients. The slope gradients were; gentle (3-15%), moderately steep (15-30%) and steep slope (>30%). A total of 27 soil samples were collected from the top 20 cm soil depth replicated three times. Composite soil samples were collected in X designed square plot with length of 15 m * 15 m and selected physical and chemical properties were analyzed in the Gondar soil laboratory. According to the result obtained most of interviewee (82%) has positive opinion on SFSB and SB on their cropland in relation to its role on improving

soil fertility based on their own indicators. From the interviewed farmer 89% perceived change in crop yield within 2 year after implementation of structures. The results of the experimental study showed that soil organic carbons (SOC), total nitrogen (N), Ava_p, Exchangeable K and Bulk density (Bd) were significantly ($p \leq 0.05$) affected by the soil conservation measures. Sand and clay fractions were significantly varied with both soil conservation measures and slope gradient. Soil organic carbon and total N were higher while bulk density was lower in soil under the non-conserved fields than in fields with conservation structures. No significant difference was observed in Soil organic carbon and total N along the slope but the mean value of Soil organic carbon and total N increase as the slope percent decrease and vice versa for soil bulk density. Similarly, CEC, EC, and exchangeable Ca^{2+} , and Mg^{2+} didn't show any significant differences with respect to SWC measures and slope gradient. It was inferred the farmers in the study area have a positive attitude towards the SWC structures as they improve the soil productivity. Likewise, the laboratory results also confirm that the soil properties are in good conditions since some of soil fertility indicators like soil organic carbons (SOC), total nitrogen (N) and Bulk density (Bd) are found to be higher in the conserved than in the non-conserved farm plots. Further research should be conducted in the area for a better understanding for sustainable land use.

Key words: soil and water conservation stone faced soil bunds, non-terraced, stone bund, water erosion

FOAA2: The impact of small scale irrigation schemes on household food Security among farmers in the drought prone districts of North Gondar Zone, Ethiopia

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Abstract

The study is conducted to assess the impact of small scale irrigation schemes on household food security in one of the drought prone districts of North Gondar Zone, West Belessa district, Amhara region. Multi-stage sampling procedure was used to select kebeles, irrigation schemes and a sample of 150 irrigation user and non user households within the district. Structured interview questionnaire and focus group discussion approaches were used to collect cross sectional data from both groups of households. The study area was purposively selected among

the drought prone areas of the Amhara region. Methodologically, the study adopted Logit Regression Model to identify factors affecting farmers' participation in irrigation schemes; two steps treatment effect models and propensity score matching to determine the impact of irrigation schemes on household food security. Findings show that while among the factors regressed on participation, gender, membership and size of own irrigable land found positively and significantly affecting participation, walking distance from the nearest main market, PSNP participation and total size of plot owned by farmers were found negatively and significantly affecting participation in small-scale irrigation schemes in the district. It is also found that, while participation in productive safety net programs increases the adult equivalent per capita weekly caloric consumption by 1621.00 kilo caloric, participation in irrigation agriculture is expected to increase the adult equivalent per capita weekly caloric consumption by about 4130.76 kilo caloric. This suggests that those households who participated in small-scale irrigation are more likely to be food secured compared to non participants and by far better than those who even participated in productive safety net programs. The study also revealed that the average adult equivalent individual consumes about 19657.44 kilo caloric of food per week among the irrigation user households and the non irrigation user households had an average per capita adult equivalent consumption level of 13494.24 kilo caloric. Accordingly, the study established that small scale irrigation has significant impact on households' food security status explained by high caloric consumption. Therefore, the study findings suggest for active involvement of the actors in promoting irrigation agriculture for farmers through farmer association, provide market access and irrigation infrastructure that increase the availability of irrigable plots for households.

***FOAA3: Participatory on Farm Evaluation of Improved Maize Varieties in Chilga
District of North Western Ethiopia***

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Abstract

Participatory variety selection (PVS) trials were conducted in 2012 and 2013 in Chilga district of North West Ethiopia to evaluate the performance of improved maize (*Zea mayz* L.) varieties and to assess farmers' criteria for maize variety selection for future maize improvement. Six

improved varieties including the local check were used for the study at four farmer villages: Anguaba, Serako and Eyaho. The experiment was laid out in a randomized complete block design and the trials were replicated over farmers' field in the three villages. The results of analysis revealed that a significant difference among the varieties for most the agronomic traits recorded except for grain yield which was not significant. With regard to location, no significant difference was observed for the majority of the traits except plant height and ear height indicating similarity in agro ecologies of the three villages. The results also revealed that farmers' preferences in some cases coincide with the researchers' selection. However, in general farmers have shown their own way of selecting a variety for their localities. These parameters include earliness, drought tolerance, grain yield, vigorosity, husk cover, cob size, grain color and grain size. Hence, it is a paramount important to include farmers' preferences in a variety selection process. Therefore, based on objectively measured traits, farmers' preferences and the agro ecologies of the site the varieties BH-540 and BHQPY-545 are recommended in the study area. The variety BHQPY-545 should be given high attention by the responsible body since it has quality protein content besides having favored traits in the study area.

Key words: Maize, Variety selection, Participatory, Grain yield

FOAA4: Screening of Some Foliar Insecticides against White fly (*Bemisia tabaci*) on Tomato at Metema Woreda, North Gondar

Eshetu Agegnehu, Yenussousma, Asrat Ayalew and zenebe G/Medhine

Abstract

Tomato is among the vegetable crops growing in Ethiopia and important cash crops for small scale growers with a potential for increasing incomes in rural areas, improving the living standards and creating employment opportunities for women and youth. Vegetables in tropical countries are the crops, which are often attacked most seriously by arthropod pests. Among the major insect pests, whiteflies one of a serious leaf-sucking pest and cause direct damage to plants by sucking plant sap and removing plant nutrients, thereby weakening the plants. The experiment was conducted in farmer's field with supplementary irrigation at Aftete-Kumer kebele in Metema woreda, North Gondar zone where white fly is the major constraint of tomato growers since 2011/12. The objective of the research was to select effective foliar insecticide for whitefly control. The experiment was initiated with five treatments such as four foliar insecticides and

one control. Foliar chemical insecticides such as Ethiosulfan 35% EC, Ethiothoate 40% EC, Ethiolathion 50% EC and Metasystox 250 %EC were used with rate of 2, 1.5, 1.5 and 0.9 milliliter per plot respectively. The plot size was 15metersquare. Plot has 5 rows and all data were collected from the central three rows. Each plot has 50 plants. Pre and posts pray count of adult flies were taken from 5 sampled plants in each plot and from which 10 leaves from each individual plant assessed for counting. Post spray count was carried out three times at 2, 5 and 7 days after applied the insecticides. Treatments were arranged by using randomized complete block design with three replications. Melka shola tomato variety was used. Insecticides were applied when there was 20 adult whiteflies were counted in a single leaves of tomato plant. Two times spraying of insecticides were conducted with 15 days interval. All agronomic practices were carried out as per the recommendation. All data were analyzed by using SAS computer software. Plots sprayed with Ethiothoate and Ethiolathion showed less significant difference on stand counting at harvesting with mean number of plants of 48.3 and 41.6 per plot respectively as compared to plots sprayed with Ethiosulfan (39.60), Metasystox (37.6) and Control (37). All treatments were not shown significant difference on pre-spraying count of adult whiteflies. In case of post-spray count of adult whiteflies, Ethiothoate showed highly significant difference ($p<0.05$) with least number of white flies population (1.6 per leaf) followed by Ethiolathion (2 per leaf). The highest number of adult white flies was recorded from control (25) and Metasystox (16.6) followed by Ethiosulfan (14.3). Regarding yield, there was significant difference ($p<0.05$) between treatments. The highest yield was obtained from Ethiothoate (401.6 grams per plot) and Ethiolathion (356.67grams per plot) followed by Metasystox (119.6 grams per plot) and Ethiosulfan (113.3 grams per plot). The lower yield was obtained from control (81.6 grams per plot). Ethiothoate and Ethiolathion have shown highest efficacy in controlling tomato white fly through reducing the population.

FOAA5: Evaluation of Integrated Use of Seed Dressing, Dust and Foliar Chemical Insecticides against Termite (*Microtermes* spp.) on Upland Rice at Metema District, North Gondar, Ethiopia

Eshetu Agegnehu, Asrate Ayalew, Yenus Ousman, Zenebe G/ Medhine and Daniel Tadesse

Abstract

Rice is among the important cereal crops grown in different parts of Ethiopia as food crop. Among different types of rice, upland rice is mostly at risk from soil insect pests, including

termites which cause significant yield losses through attacking all portions of the rice plant. The experiment was conducted at Gendewuha Research Station in Metema district since 2011/12 main cropping season to determine the efficacy of integrated use of seed dressing, dust and foliar chemical insecticides against termite. Six treatments such as Apron Star 42 WS seed dressing chemical insecticides, Apron Star 42 WS plus Ethiosulfan 5 % dust insecticide, Apron Star 42 WS plus Diazinon 60% EC foliar insecticides, Ethiosulfan 5 % dust, Diazinon 60% EC and Control were used and arranged by using RCBD with three replications. All data were analyzed by using SAS computer software. Plots sown with seeds treated with Apron Star plus Ethiosulfan (676.67) showed least significance differences as compared with Plots sown with seeds treated with Apron Star seed plus Diazinon (646.67) and sown with only Apron Star (595.00). Whereas, there were high significant differences ($P < 0.01$) as compared to plots treated with Ethiosulfan (533.33), plots sprayed with Diazinon (515.00) and control (331.67) in the case of stand counting at harvesting. Least significantly different was observed between plots sown with seeds treated with Apron Star plus Ethiosulfan (100.13cm), Plots sown with seeds treated with Apron Star plus Diazinon (95.40cm) and plots sown with only Apron Star (87.13cm) on plant height recorded at harvesting. However, high significant differences ($P < 0.01$) observed as compared to Ethiosulfan (81.86cm), Diazinon (77.20cm) and control (66.06cm). No significant difference was observed in Plots sown with seeds treated with Apron Star plus Ethiosulfan showed as compared to Plots sown with seeds treated with Apron Star plus Diazinon (646.67) and sown with only Apron Star with least mean number of damaged plants of 45, 60 and 71.67 per plot respectively. However, significant number of damaged plants due to termite was recorded from plots treated with Ethiosulfan (98.33) and plots sprayed with Diazinon (108.33). The highest number of damaged plants was recorded from control (226.67). There was significant difference between treatments on yield. The highest yield was obtained from Plots sown with seeds treated with Apron Star plus Ethiosulfan (6.20 kg) and Apron Star plus Diazinon (6.01kg) followed by sole Apron Star (4.50kg) and Ethiosulfan (3.00kg). The lower yield was obtained from plots sprayed with Diazinone foliar insecticide (2.03kg) and control (1.08kg). Apron Star seed dressing insecticide plus applying Ethiosulfan dust insecticide at sowing time or one times Diazinon foliar insecticide 15 days after seedling emerged have shown highest efficacy in controlling termite through reducing the population and damages via

increasing yields. Sole application of Apron Star seed dressing insecticide has also showed promising results against termites.

Keywords: Seed Dressing, Dust, Foliar, Termite, Upland Rice.

FOAA6: Evaluating the sustainability of soil and water conservation structures in Gondar Zuria wereda.

By: Jigar yirsaw, Befekadu Abayneh, Yohannis G/mariam

Abstract

Soil degradation is one of the major environmental problems challenging agricultural production in many parts of Ethiopia. Even though a number of soil and water conservation methods were introduced and practiced, the continued use of these structures is far below expectations and soil erosion continues to be a serious problem. This research was conducted to determine the personal, economic, institutional, and biophysical factors that influence the continued use soil and water conservation structures in Gondar Zuria wereda. Formal and informal surveys were undertaken as means of data gathering for the study. A total of 150 households were participated in supplying information and several fields were visited during transect walks. Data were analyzed with the use of descriptive statistics, cross tabulation and chi-square test methods. The results show that gender, age, education, farm size, farm distance, training, technical support, yield status, slope and type of erosion are among the major factors that positively and significantly influence the continued use of soil and water conservation measures. Wealth status shows no significant influence on the continued use of soil and water conservation. The institutional analysis shows that the Agricultural Office of the district should integrate its operations and give due emphasis to ensure the continued application of SWC practices.

FOAA7: The status of Vetiver grass as a technique for soil and water conservation in Lay Armachiho wereda.

Jigar Yirsaw, Ashenafi Teklay

Abstract

Soil erosion is one of the most severe problems affecting the agriculture sector in Ethiopia. Vetiver grass has been introduced by NGO's in Lay Armachiho wereda as abiological soil and

water conservation measure to protect soil erosion in farmers' field. The objective of the study was to assess the status of vetiver grass as a biological soil and water conservation structure in Lay Armachiho wereda to protect farmers' land from soil erosion. A total of 150 household heads were selected randomly and participated in supplying information in three watersheds. Questionnaire, interview and field observation were used to collect data from sample respondents. Data were analyzed with the use of descriptive statistics, cross tabulation and chi-square test methods. The result showed that education, use of physical and biological SWC structures, effectiveness of Vetiver grass for SWC, training and technical support by DA's and agricultural experts were found to be significantly related to the adoption of vetiver grass whereas sex, age, wealth status, farm size and farm distance were not significantly related to the use of vetiver grass as a biological soil and water conservation technique.

8. School of Education, 2013/14

SOEAI: Challenges and Opportunities of Modular Instruction at Gondar

University: the Case of Maraki Campus

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Abstract

This study explores the development of modular education and its application in the University of Gondar, Maraki Campus. A learning module is a self-learning package dealing with one specific subject matter unit. It can be used in any setting convenient to the learner and may be completed at the learner's own pace. It is structured in such a way that learner can identify the objectives he/she wants to achieve and evaluate his/her own achievements. Considering the importance of modular instruction for quality education, Gondar University has started implementing this programme since 2012/2013 academic year. The main objective of this study is to determine the effectiveness of modular instruction to quality education at Gondar University in general and Maraki Camus in particular. The specific objective of the study is to compare and contrast the benefits of the modularization programme and the traditional lecture type education, to explore the opinion of students about the new teaching methods, and to find out remedies to solve the problem in this modularization programme. To study these issues, both qualitative and quantitative research methodology were applied. In terms of data collection methods, the research employed focus group discussion and structured interview with students and instructors at Gondar University, Markai Campus, to collect relevant data. Qualitative data was collected using unstructured and focus group discussion with students and instructors at this Campus. Quantitative data was collected by using structured interview/questionnaire/ which was filled by four hundred students who were selected using stratified sampling technique. To analyze quantitative data, descriptive data analysis was applied. SPSS software was used to analyze collected data yielding descriptive results such as percentages, frequency distributions mean scores, etc... Qualitative data was analyzed using thematic and narrative analysis. The finding of the research argued that modular instruction has both challenges and opportunities for quality education at Gondar University in general and Maraki Campuse in particular. The data collected from focus group discussion with students and instructors plus a questionnaire filled by students' show that modular instruction made students to stick to their study rather than going out of the

university. This is because there is continuous quiz and intensive lecture in short period of time/probably ten to twelve days/ for three credit hour subject. Almost all students argued modular instruction has increased their grades as they usually study one particular subject continuously. Additionally, since students' evaluation is based on criterion-referenced methods than norm reference, it greatly increased peer teaching as students are computing with themselves than with other students. Lastly, modular instruction enhanced the university's motto "first day, first class" principle.. While modular instruction offers a variety of advantages, many of students and instructors argued that modular instruction has a number of challenges at the university of Gondar in general and Maraki Campus in particular. By referring the questionnaire filled by students, it can be concluded that almost all students argued modular instruction increase grade and decrease knowledge. The reason they gave include: modular instruction does not consider the context here in Ethiopia, the short –time span of the modular course leaves no opportunity for the students to achieve their full potential, and modular instruction has no value in knowledge transfer and knowledge retention. Almost all students argued that modular instruction promoted the surface approach to learning, the students are intend to simply cope with the task; thus, they engage in a much more restricted learning process, particularly routine memorization. Students are not in a position to extract meaning and, thus, engage in an active process of learning that involves relating ideas and searching for patterns and principles. The paper concludes that the implementation of modular instruction has both negative and positive dimensions. Modular approach makes easier for students to stay on track regarding their studies. Students and instructors started to use their time properly as the programme is time bounded. But modular instruction has negative results to quality education as the time given for one particular subject is too short. Students did not get proper knowledge in this short period of time.

Key words: Module, competency, Bologna process, Flexibility, Constructivism, workload

SOEA2: Analysis on the role of Educational Leadership for the realization of Quality Education System in Ethiopia: The case of south and north Gondar Administrative Zonal Preparatory Secondary Schools.

Melese Birhanu/Lecturer/, SOE

Abstract

This research is aimed at to make intellectual analysis on the role of educational leadership for the realization of quality education system in Ethiopia in particular to South and North Gondar Administrative Zonal preparatory secondary schools. To hold this study, 'Mixed Methods Research Design' was employed in order to analyze facts about the role of educational leadership for the realization of quality education system which in turn helps schools audit, enhance and assure quality education. Qualitative data were obtained through interviews with the selected key participants; school principals. Questionnaire was mainly used to gather data from the sample respondents. Qualitative descriptions were done to analyze data from the interviews. Descriptive statistics was processed to analyze quantitative data obtained through the questionnaire. Thoroughly, it was discovered that the majority of the preparatory schools are being led by specialists in educational planning and management. However, a considerable number of schools are being led by non-professionals. The finding also stated that the majority of the respondents know that school principals were assigned as principals without the genuine acceptance of the school teachers regardless of their political point of view. They were not properly elected by the school community. However, a considerable number of schools have been led by those principals who have full professional acceptance which might let the school leadership system conducive to its overall teaching learning process. This may tell us though most of the school directors are not elected with thier higher professional acceptance by the teachers, after their appointment their acceptance increases. In the study, ethical leadership system has been taken in to account by the majority of school principals in spite of some principals. And a considerable number of school principals do not have leadership training experiences which may imply that these leaders may not be professionals in educational policy and leadership. Principals' general approach daily shown to school teachers during their work process is vital for effective school leadership system. The study has also revealed that most of the school leaders found in the sample schools are free from bad addictions except in some of other schools. So we can guess

that how much these some principals are truly and properly leading these public pre-college/university schools as far as bad addiction is prohibited by the law of academics. A lot of teachers put their strong belief on the practice of democratic leadership style in order to have quality education system for their own school. As educators it is foolish to desire rational decision making process and school leadership system from school principals who do not use their school's leadership policy as guide line. Briefly, it has also been examined that democratic leadership practice can be a true prerequisite to quality education system for effective school leadership system. There is a strong relationship between educational leadership practice and quality education of one's school. Therefore, it is safe to recommend that professional principals in the field of educational leadership and policy, or educational planning and management must be assigned to the preparatory secondary schools if we need to achieve quality education as national development goal.

9. School of Law, 2013/14

SOLA1: A Right Based Approach to Fishing: The Case of Small Scale Fishing in Lake Tana

Muluken Getachew (LL.B, MA)

Abstract

Fisheries make important contributions to poverty reduction and food security and can be a source of wealth creation, supporting national economic development. In order to sustain and enhance these contributions, a policy environment that enables responsible fisheries in the small-scale sector is required. Legal recognition and protection of small-scale fishing and fish marketing interests as well as strengthening community fishing rights are key elements of this enabling environment. The current trend towards devolving fishing rights to resource users have greater benefits if there is a simultaneous effort to reduce vulnerability and social exclusion in small-scale fishing communities. This research paper has highlights the linkages between fishing rights and human rights; the applicability of these rights to access to fishing and the right to participate in the decision making process concerning resource allocation and management. To this end qualitative data were collected through questioners, FGD, and an interview with the relevant stake holders. The data revealed that there is little focus given by the appropriate officials to the fishing community to be successful in the fishing sector. So the researcher recommended much emphasis to be rewarded for the fishing community so as to fulfill their basic demand as a community and human being.

KEY WORDS: Fishing; Right Based Approach; Food Security

SOLA2: RESEARCH REPORT ON: ACCESS TO JUSTICE IN REALITY: ASSESSMENT OF THE LEGAL AID SCHEME IN NORTH GONDAR ZONE, ETHIOPIA

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Abstract

In the dearth of legal aid service, the have-nots by no means able to access justice to effectively exercise most of their human rights and unable to use the system at large. Such a fact in turn perpetuates exclusion and poverty to the indigent and vulnerable individuals or groups while the haves are able to purchase justice. Such a problem is highly probable and in fact has existed in Ethiopia where illiteracy, low income level, and physical barriers have been commonplace till recently. Amhara Regional State took the lion share of this problem, and true to North Gondar Zone, too, which is the vast zone where the majority of residents are illiterate, vulnerable and live in far distant districts (rural areas). The international human rights instruments make it clear that standardized legal aid service is a human right to which governments must fulfill. Such instruments also suggest standards of a legal aid system in a particular jurisdiction. However, on the one hand many indigent or vulnerable individuals or groups are still unable to access standardized legal aid service, and on the other hand there is no systematic study on the legal aid scheme in the region, in general, and in North Gondar Zone, in particular. The objective of this study, therefore, is to briefly assess the legal aid service scheme in North Gondar Zone. Three focus discussions (FGD) were conducted in Kola Diba, Maksegnit and Debarq among police, judges, public prosecutors and law students who are offering legal aid service providers. Besides, 28 individual interviews were conducted with justice machineries such as police, judges, public prosecutors, student legal aid service providers and justice offices' officers. Field observation was also conducted in all the research areas. Available document analysis was also made. Findings demonstrate a very fragmented and disorganized legal aid scheme in the study areas. The drawbacks start with the gaps concerning legal and institutional frameworks and extended to the practical challenges. There is no independent organ responsible for the legal aid service, and funding even the existing fragmented legal aid service is tangential. Mostly, ineffective and much costly models of legal aid service are prioritized at the expense of those proven effective and less costly types of legal aid service. Besides, legal aid service providers or actors are not diversified, particularly after the introduction of Civil Society Organizations (CSO) in 2009. Even there is some form of "envy" or distrust among some of the existing actors instead of co-operation and coordination. Further, oversight mechanisms and proper management of the legal aid scheme is lacking. What is worth mentioning is rural areas are marginalized as far as legal aid service is concerned. The existing service provision is not properly documented, if there is at

all, and not disaggregated. However, the law school legal aid centers are found to have better performing, with all the defects, in addressing the legal problems of vulnerable, indigent and “unpopular” individuals or groups of the local community. The legal aid scheme in North Gondar Zone is not standardized. Thus, proper attention should be paid from the very legal and institutional frameworks. Accurate documentation and disaggregate data in addition to emphasizing the most proven effective and less costly service types are also recommended. Above all, diversification of actors and coordination and cooperation among them is crucial not less than allocating regular funding to make the service sustainable.

Key words: Human rights, legal aid, access to justice, actor

***SOLA3: Access to Justice Rights of Indigents in Rural Land Disputes and the Role of
Legal Aid Centers: A Case Study In North Gondar Zone
Adis Gemechu (LLB, MA)***

Abstract

It is evident that a well designed and an active system targeting to improve the right of access to justice in the context of rural areas, where significant portions of the population lives under extremely harsh life conditions, greatly help achieve all state efforts to ensure the broader and entwined goals of poverty reductions, human developments and good governance. It is also well noted that access to justice, properly understood, is not only requires the traditional components of providing the normative protection of rights and establishing the institutional mechanisms capable of rendering effective remedies of justice. Apart from these, there is the third aspect of access to justice which requires the state to allow its citizens the opportunity to gain at least minimal access to various services that primarily equip people with the ability to demand justice that help them to assert and claim their rights. Needless to mention this aspect of access to justice is important to entrench effective, meaningful and accessible justice system.

However studies so far have not properly addressed the right of indigents to be assisted in legal and administrative disputes. There is also lack of adequate investigation on the practical feature of access to justice in rural areas. Another apparent problem in this respect is that the system of access to justice at the level of regional states and more at local government administrative organs have not been studied in a well structured and comprehensive researches. Hence, it turns out such approaches had largely left the experiences of Regional States, as if it is something

legally futile subject, far from being explored in many respects. Arguably the trend so far not only emerge partial to depict the big picture of access to justice but also carries with it an unintended effects arising from surrounding misconceptions as to the proper weight that should be given to the various systems Regional States would practically provide. Furthermore, it is not so difficult for one to guess in the sector of land administration, which is always blamed for corruption and abuse of public power, the problem of access to justice is very serious problem. The research therefore has strived to make a major turn in this regard by specifically focusing on the role of legal aid centers in promoting access to justice rights of rural land holders living in north Gondar zone. To this end the study has attempted to identify the peculiar problems pertaining to administration of rural land dispute by conducting in depth interview with judges, legal professionals appointed in legal aids and land administration officers. To make the case more sound and objective on such account, it has also critically examined the ANRS rural land administration system vis-à-vis the legal and institutional frameworks governing access to justice rights of the rural communities at the level of local government units.

Generally the study revealed that, though encouraging, the existing initiatives of legal aid center to enhance access to justice right of rural land holders has certain limitations particularly in so far as legal empowerment is concerned. In this regard this work has attempted to point out specific areas of concern and forwarded some recommendations.

SOLA4: SUBSTANTIVE LIMITATION OF ACTIONS IN CIVIL CASES IN ETHIOPIA

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Abstract

Periods of limitation impose time limits with in which a party must bring substantive or procedural claims against the other party. Unless properly implemented, the misuse of such periods for barring claims adversely affects the constitutional right to access to justice and equality before a law. Even though the purpose, the degree and its detailed execution is different, the rule of period of limitations has been implemented in civil and criminal cases in all legal systems including Ethiopia. Regarding civil cases of substantive claims, different period of

limitations are prescribed in our civil code, commercial code and other proclamations based on the types of claim the plaintiff is seeking for.

The study is aimed to critically analyze the legal gaps and controversies related with the application of different rules of limitations of actions in civil cases in the Ethiopian legal system. Methodologically, the study employed comparative and analytical approaches which is mainly depends on documentary, legal and court case analysis even though in-depth interview and focus group discussions are used as main data collection instruments to look in to gaps in law and practice. Triangulation method of analysis is also used to check the validity and coherence of data as well as to mirror out gaps and enforcement challenges towards the implementation of rules of limitations of action.

The findings of the study revealed that the lack of clear and comprehensive limitation statutes in Ethiopia has been creating difficulty to give verdicts on cases involving limitations of actions. The number of cassation decisions given on limitation of actions in civil cases shows the controversial nature of the issue. Moreover, the absence of clear exclusionary rules, lack of clear conditions to identify the applicable period of limitation on the case at hand, lack of clear mechanism to determine the scope of application of the general period of limitation provided under Art 1845 of the civil code have been mainly contributed for conflicting court decisions. Therefore, rather than waiting the cassation decisions to exhaust the controversial issues of period of limitation and thereby to insure the uniform application of the concept, the legislature shall come up with a separate and fully fledged limitation statute which stipulates types of claims with their respective periods and the general rules of executing limitations of actions in civil cases.

***SOLA5: CRIME AND PUNISHMENT: OUTSOURCING CORRECTIONAL
FACILITIES: A PRACTICAL APPRAISAL OF ETHIOPIAN CORRECTIONAL
INSTITUTIONS***

Wondwossen Wakene (LL.B, LL.M)

Abstract

Criminal Justice System hinges upon the hypothesis that crime and criminals are the subject matters of the state. As a result, the state has the “right to punish”.¹ For long time in the history of criminal justice, the state managed to control the criminal justice system on the basis of the above mentioned belief. With this in mind, the state continued to initiate criminal investigations and prosecutions. If successful in getting the conviction of suspects, the state will incarcerate its prisoners in prison institutions ran and administered by it. The justification for this action is that crime as well as the criminal is threats to the public and the public, through its representative called the government, will put the culprit in the safe hands of the government.² In this research, the investigation is whether this habitual philosophy of the criminal in the safe hands of the government holds well. Contemporary criminological discourses do not discount to look sideways in case the fixated conservative belief of the criminal in the hands of the government is getting inefficient and backward. Most issues traditionally considered as the subject matters of the state are being outsourced to the private sector. A case in point will be the outsourcing and privatization ventures observed with regard to the military and the security.³ Outsourcing prisons is another area where policy makers are looking forward in case the inefficiency of government sponsored prisons arises in the first place out of the presence of the government in the process. So the issue is whether the state forfeits its sovereignty in favor of private institutions, whose legitimacy is in a precarious condition than the state itself. The question therefore in Ethiopia is if after all there are constitutional limits on the state from giving part of its activities to private institutions. In this research the legal regime allowing or prohibiting privatizing prisons along with the efficiency or otherwise of the privatization venture has been investigated. In doing so, the current stature of prisons in Ethiopia has been overviewed. Based on preliminary data findings, one can say that Ethiopian prison administrations are inefficient⁴ in a sense that they are

¹ CEASARE BECCARIA, ON CRIMES AND PUNISHMENTS

² GEORGE B. VOLD & et al, THEORETICAL CRIMINOLOGY (4TH EDS, 1998)

³ MARK J. POWER & et al, THE OUTSOURCING HANDBOOK: HOW TO IMPLEMENT A SUCCESSFUL OUTSOURCING PROCESS (2006), for a different argument please see SI KAHN & et al, THE FOX IN THE HENHOUSE: HOW PRIVATIZATION THREATENS DEMOCRACY (2009)

⁴ Federal Democratic Republic of Ethiopia Comprehensive Justice System Reform Program BASELINE STUDY REPORT (2005)

not very successful in providing the services they are established to render such as good housing, food, clothing and health facilities.⁵ Given this, what possible options are there to make prison administration efficient without compromising the concerns of the state towards law and order and the rights of prisoners to get the best of facilities while they are in prison and work in favor of their hastened rehabilitation? The research has employed both qualitative and quantitative data. It was found out that the prison system under state control lacks efficiency and outsourcing certain activities will make the correctional system efficient.

***SOLA6: Title: Legal Responsibility of Medical Professionals and Medical Institutions
in Ethiopia: A Case Study in Selected Gondar Zones
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Abstract

The legal aspect of medical practice in Ethiopia in general and in Gondar zonal administrations in particular has been given little attention. However, with the increase of public awareness about the legal aspects of patient safety, knowledge of medical law has become an indispensable part of medical practice. This study has been conducted in three major Hospitals in Gondar Zones – Gondar town, Debarke and Debre Tabor Hospitals with the aim of examining the legal responsibility of medical professionals and institutions for medical malpractice. The study focused on administrative, criminal, extra-contractual and contractual liabilities that are emerging within the body of Ethiopian medical law against the allegedly negligent health professionals and medical institutions. Methodically, the study relied on qualitative data gathering methods such as review of notable comparative legal literatures, key informant interviews and archival studies. Accordingly, through triangulation method, data gathered from stakeholders in the study areas were cross checked for their reliability and validity. Court cases and disciplinary decisions were also investigated to show the existence of negligent medical practice in the study areas. Relevant legislations and policy documents that regulate the conduct of medical professions are gathered and analyzed with field data to establish the scope of legal

⁵ Articles 6-13, Regulation No. 138/2007, Federal Negarit Gazeta, No.47

responsibilities. The discussion shows that most medical malpractices in the study area were only subjected to administrative liabilities under Civil Servant disciplinary rules and the application of criminal, extra-contractual and contractual liabilities are unfamiliar. The finding of the study reveals that the instrumentalities of criminal and civil liabilities in the study areas were futile due to the scores of reasons that includes but not limited to lack of institutional coordination between regulatory bodies; lack of external reporting mechanisms of negligent medical practices to law enforcement bodies and the difficulties of production of expert evidence to successfully establish cause and effects in medical malpractice cases. It is concluded that due to the reasons noted above, the normative frameworks of Ethiopian medical law remains ineffective and resulted in implementation failure. Therefore, it is recommended that in order to effectively enforce Ethiopian medical laws, strong, accessible and separate regulatory body that deals with medical malpractice should be established at least at zonal levels in a bid to improve the current state of medical practice as an aspect of ensuring patient safety in the overall health sector.

Key Words: Gondar, legal liabilities, medical law, malpractice, medical professionals, medical institutions, Ethiopia

SOLA7: Assessing the Practice of Child Participation in Custody and Access

Proceedings: The case of ANRS courts

Muluken Getachew (LL.B, MA)

Abstract

Custody and access decisions have a profound effect on children's lives, and consequently both federal and state constitutions direct courts to make any decisions according to the best interests of the child. In addition the Amhara regional state family law superficially appears child centric, primarily concerned with the protection and promotion of children's interests during familial breakdown. However, the legal system currently fails to ensure that children have an opportunity to participate meaningfully in custody and access decisions by neither encouraging nor valuing their voices. This research proposal is based on the assumption that achieving meaningful inclusion of a child in custody and access proceedings is both a legal necessity and requires the creation of opportunities for children to share their concerns, feelings and interests so that children's views can be heard, hence failure to do so is an infringement of rights and hinders a proper delivery of justice. Since, this research explores the voices of children in the context of

child custody disputes the main purposes were (1) systematically retrieve qualitative studies to explore children's views and preferences in the context of decision making in divorce and custody and (2) explore how children's voices are being heard or not. We begun by observing the theoretical and legal standards for child participation in general and in custody and access matters in specific. To this end both primary and secondary data were conducted through content analysis, interviews, and observations. The research findings indicated that child participation in the courts of the regional states are performed in a very minimal and unorganized manner. Awareness creation trainings for the judges in the different levels and organizing a child friendly court facilities as well as hiring a child welfare officers to assist child participation in the court proceedings are some of the recommendations forwarded in this research work.

Key words: Custody, Access, Participation

***SOLA8: AN ANALYSIS OF ROLE OF ALTERNATIVE DISPUTE RESOLUTION
MECHANISMS IN RURAL LAND DISPUTES IN AMHARA NATIONAL
REGIONAL STATE: A CASE STUDY OF SOUTH GONDAR ZONE
WENDMAGEGN GEBRE (LLB, LLM)***

Abstract

Conflict or dispute is endemic to human society —among individuals and groups— and it is imperative to manage it. The provision of effective dispute resolution is, as a consequence, the core concern of national and international justice systems. Affording effective dispute resolution is very important to ensure that disputes are solved through effective and efficient means for the benefits of the disputants and the society in general. So, in order to attain this core objective, different states have been searching various ways of resolving dispute than insisting on the traditional way of resolving it through court litigation which is mostly ineffective and inefficient. Now days, therefore, the use of a range of informal dispute resolution processes such as mediation/ conciliation and arbitration, falling within the rubric of Alternative Dispute Resolution (ADR), is widely accepted in a variety of dispute contexts. ADR, sometimes also called “Appropriate Dispute Resolution”, denotes all forms of dispute resolution other than litigation or adjudication through courts. That is, it refers to all sorts of alternative dispute settlement mechanisms that operate outside the formal justice system. This may include both traditional —community-based conflict resolution systems which provide their own social order outside the formal legal system —and the informal processes of the highly structured and organized court-based ADR mechanisms. Hence, the researchers, henceforth, will, for present purposes, consider traditional forms of dispute resolution as ADR mechanisms for they are out-of-court and amicable dispute settlement processes that operate outside the formal justice system that co-exists. ADR, both traditional and court-based, has got wide acceptance to resolve disputes due to its perceived advantages. Particularly, in developing countries, where lack of access to justice is a big problem, it plays pivotal roles in promoting access to justice.

In Ethiopia, customary ways of dispute settlement, which grow parallel to formal adjudicative litigation system, of different ethnic societies is prominent in many parts of the country. Traditional forms of dispute resolution or ADR mechanisms have also long existed in Amhara National Regional State (ANRS) in general and in rural South Gondar Zone in particular. The different legislations applicable to rural land in ANRS have provided for a dispute, which may

arise in connection to rural land holding or use, settlement through ADR methods. The legislations, in recognizing ADR mechanisms, allow the use of customary laws and practices of each particular community. This research generally examines as to what role alternative mechanisms of rural land dispute settlements play in South Gondar Zone in, inter alia, providing greater access to justice and , reducing, if not avoiding, prolonged hostilities that may eventually divide community members in blood feuds. However, the potential importance of ADR mechanisms, including the cost and time effectiveness of the processes, must be balanced against the reality that customary rules and practices often tend to be discriminatory. Accordingly, this research investigates, with a prime focus on their roles, whether ADR processes in rural land disputes in South Gondar Zone are not discriminatory. The research, in this regard, critically scrutinizes if there are fair and equitable legal and institutional frameworks that protect human rights norms and ensure effective delivery of justice in land dispute resolutions. In this study, the researchers employ the qualitative research methodology. The research utilizes both primary data — in the form of interviews, field observation and focus group discussions — and secondary sources, such as statistical data, relevant books, journal articles, arbitration decisions, laws and warranted websites.

KEY WORDS: Access to justice, ADR mechanisms, rural land disputes, Shimagiles'/arbitrators' Shengo

10. School of Technology, 2013/14

SoT A1: Design, Modeling and Simulation of Solar Parabolic Trough Power Generation System

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Abstract

The availability of solar thermal power technologies nowadays is increasing worldwide as favorable candidates to satisfy the growing demand for both domestic and alternative energy sources due to the price of fossil fuels has increased significantly and climate change concerns have surfaced. Parabolic trough power plants are the primary solar thermal power plants widely used in recent years.

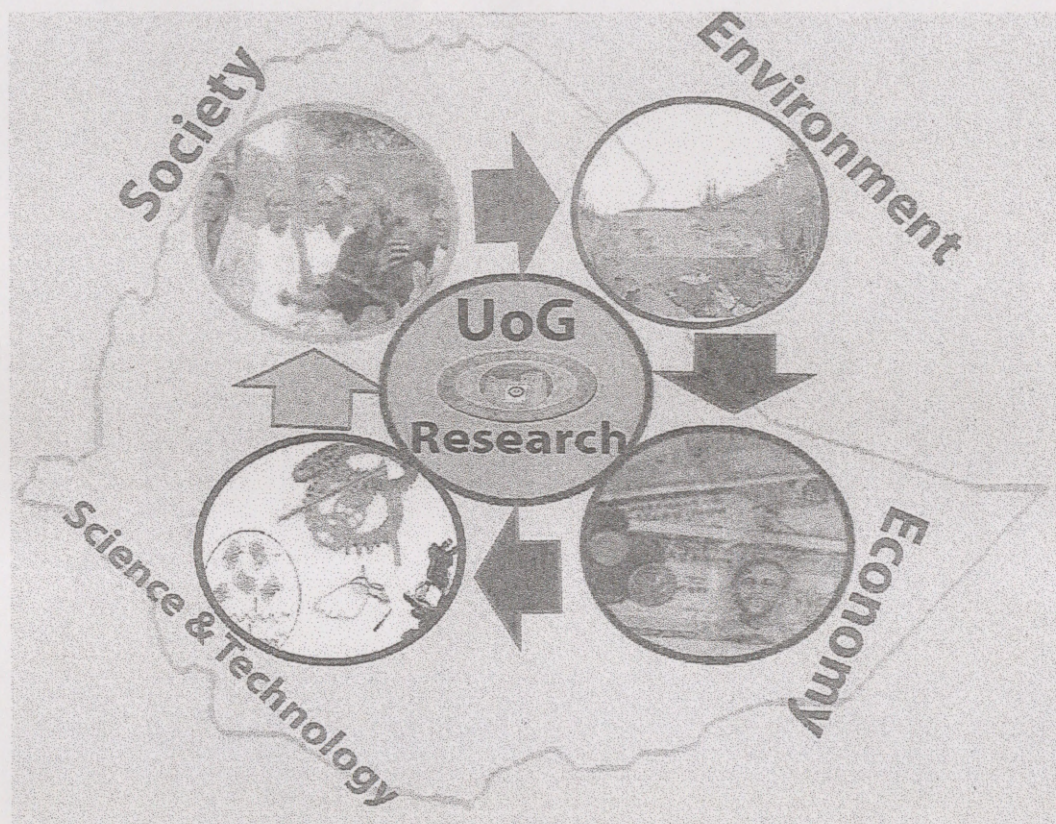
Parabolic trough power plants use concentrated sunlight, in place of fossil fuels, to provide the thermal energy required to drive a conventional power plant. These plants use a large field of parabolic trough collectors which track the sun during the day and concentrate the solar radiation on a receiver tube located at the focus of the parabolic shaped mirrors. A heat transfer fluid passes through the receiver and is heated to temperatures required to generate steam and drive a conventional Rankine cycle steam power plant.

This research work is intended to develop computer modeling and simulation for parabolic trough power system having a thermal storage system using appropriate softwares and simulation tools to predict performance of the plant. Engineering Equation Solver (EES) software is applied for modeling of the conventional power cycle at reference state and TRNSYS simulation tool is used to simulate the performance of the model at off design weather conditions.

The modeling and simulation is done for two different conditions under Gondar town weather condition, one for the plant having thermal storage and the other without thermal storage system. The performances of the two conditions are obtained in simulation results.

Comparison of the two power plants (with and without storage) is made in terms of cost and financial analysis using solar advisor model software (SAM). The cash flow for the specified year and the costs associated with plants are determined using SAM.

Key words: *Parabolic Trough, Solar, Trnsys*



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